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EDITORIAL

CHANGE IN INTERPRETATION OF HARRISON LAW.

No doubt the following recent announcement of the United States Treasury Department will prove interesting and useful to our readers:

> "The ruling contained in T. D. 2194, holding synthetic substitutes subject to the provisions of the Act of December 17, 1914, and requiring manufacturers of, dealers in, and physicians prescribing any such substitutes, as therein defined, to register and otherwise conform to the Harrison narcotic law and the regulations issued thereunder, is hereby revoked, to take effect this date."

This means that physicians will no longer be bothered to carry out the details of the Harrison law when writing prescriptions

containing novocaine, for instance, or when purchasing such synthetics for office use.

We have never understood the reason for their inclusion, anyway, and they had not been included in the first interpretation of the law. Evidently further consideration by the Treasury officials have made them reach the same decision which we hope will now be final.

THE MEDICAL OFFICERS RESERVE CORPS.

There are two facts which should be presented to all physicians in the United States for their serious consideration. The first is that *every man who is not bound by obligations to others dependent upon him should offer his services to the Surgeon General of the Army at Washington at the earliest possible moment.* This will permit an estimate of available medical men for the positions in the army to be raised at an early date. The second fact is that all physicians should seriously consider the individual services they can render and should then co-operate with the State Committees on Medical Preparedness whenever they can.

All organization of large bodies is bound to be slow and the task of co-ordinating the medical group of officers in the army is immense.

The application for the Medical Reserve Corps is coming in slowly and it is worthy of comment that men of forty to fifty-five are responding as rapidly as the younger men.

The application for service with the Medical Reserve Corps should be made only after mature deliberation. This should include the determination to accept a commission in the army as a member of the Reserve Corps if the application is favorably acted upon. The time to have "cold feet" is before the application is made, not afterwards. In making application, the candidate for a commission should understand that his services will be needed for the period of the war and that no matter what sort of practice he may have followed in civil life, as soon as he joins the Medical Officers' Reserve Corps he is liable to

be assigned for duty within a few weeks, even days, thereafter.

When assigned to duty he will be expected to do just what he is told to do.

As rapidly as possible local examiners are being appointed in the several States, with distribution in the principal cities, so as to hurry the enrollment of officers in the Medical Reserve Corps. In Louisiana only a few examiners have been so far appointed, but this should not delay applications.

The New Orleans Board of Examiners will furnish all information regarding forms and procedure of examination and every physician in Louisiana who can conclude that he should respond to the call may write to Dr. Isadore Dyer, P. O. Box 770, for full particulars.

SALVARSAN OR ARSENOBENZOL.

We were preparing a convincing editorial urging congressional action for the purpose of voiding or suspending the patent rights on Salvarsan—but what's the use? We learn that Mr. Emerson, from one of the Ohio districts, has already introduced a bill which is entitled "A bill to abrogate the patent upon the article known as Salvarsan," which has the advantage of being both clear and concise. It has been referred to the patent committee and reads as follos:

> Whereas, The use of salvarsan is now necessary to the medical profession and the output of the article is so handicapped because of certain patent rights; therefore
>
> Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the patent rights issued upon the article known as salvarsan is hereby abrogated and set aside and declared null and void.

The only thing for us to do is to urge our congressmen to give their active support to the measure.

Whatever place future observation will grant to the chemical in the permanent cure of syphilis, it is generally conceded that it exerts the most prompt effect in controlling lesions, and in

that manner, if in no other, it is of most valuable aid in treatment. Its scarcity at intervals during more than two years has been seriously felt, but was due mainly to the prohibitive rights secured for it in this country. It can be and is being made in several countries, but could not be made and sold here or imported into this country under any other name, hence the intolerable monopoly an the impossibility of using a definite chemical compound for the good of the sick.

We hope rapid congressional action will correct the abuse and we know that Salvarsan under any other name will act just as well.

NOTICE.

THE AMERICAN SOCIETY OF TROPICAL MEDICINE

The American Society of Tropical Medicine will hold its fourteenth annual meeting, in the lecture room of the Margaret Fahnestock Training School of the New York Post-Graduate Medical School and Hospital, 304 East Twentieth street, New York City, June 4, 5, 1917.

The program includes several interesting titles with original subjects.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

HYPOTHYROIDISM, WITH REPORT OF A CASE.*

By S. CHAILLE JAMISON, M. D., New Orleans.

Three distinct pathological entities are included under this general title; these are cretinism, Gull's disease, and cachexia strumipriva. The first disease is due to congenital absence of the thyroid gland, the second is due to the complete or partial failure of the gland, and the third to its operative removal.

The case that I wish to report tonight is one of Gull's disease. A brief review of the signs and symptoms is, perhaps, not out of place.

The patient usually consults a physician because of the mental langor, the turpitude, the drowsiness, and vague general pains from which she suffers. At other times the swollen appearance, or the dyspnea drives her to the doctor. The most characteristic and striking sign is the edematous appearance of such cases; this, of course, is not a true edema, but is due to the deposition in the tissues of a mucin-like substance, deposits of this substance tending to occur especially in the skin of the face, the shoulder pads, and, to a less degree the extremities. Such deposits in the skin of the face produce a fixed, mask-like expression, with an absence of the normal lines, a widening of the nose, a waxy color, and narrowing of the palpebral fissure. The hair becomes dry, coarse and brittle; areas of alopecia may occur. The tongue is dry and usually enlarged; the teeth are decayed and worn. The pulse is slow and the blood pressure low. There is, in the course of time, a reduction in the percentage

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of hemoglobin, and also of the erythrocytes. The mononuclear elements of the blood, and the eosinophiles, tend to increase.

Various psychoses may occur, although the commonest is of the melancholic type.

Dependent entirely on the stage of the disease, the case may appear well nourished or cachexia may be more or less marked; the cachexia is certain to supervene in the course of time.

The genital organs are early and markedly affected. The hair of the axilla and on the vulva becomes scanty; the breasts shrivel; menstruation ceases and the uterus atrophies.

Constipation is a constant accompaniment of the disease. The urine is decreased in amount, but abnormalities are incidental.

Case History: Americus Johnson, 123 N. Prieur street, was admitttd to my clinic, at the Charity Hospital, January 10, 1917. She is a chocolate-colored negro female, 30 years old.

Complaint: "Swelling, and shortness of breath."

Family History:. Father died of asthma. Other members of the family cannot be accounted for. All members of the family are supposed to have "kidney trouble."

Past History.: The usual diseases of childhood. "Rheumatism" for the past four years. Headache and sore throat during the past week. Denies venereal disease.

Menstrual History:. First menstruation at 18 years. Menstruation has always been irregular, at long intervals, very scanty, and of one or two days duration. Her breasts have never developed, and hair appeared on her body very late.

Present Illness: This attack began one week ago with weakness after eating, swelling of the face, thickness of the tongue, and shortness of breath.

Physical Examination: The patient has a stupid, sleepy expression, which does not change much when she smiles or frowns. The tongue is dry and large, with the indentations of the teeth well marked. The teeth present nothing of note. The lungs are normal. The heart is not enlarged; the sounds are clear. There are no murmurs. The pulse is 60, the respirations 11

per minute. The systolic blood pressure is 115 mm (palpatory: radial artery). The abdomen is easily palpable, but there is no abnormality noted. The patient is moderately well nourished, and, except for the face, the "swellings" that she mentions can not be defined.

Laboratory Findings: The urine is normal to the usual chemical and microscopical examinations. The hemoglobin is 60%; the differential leukocyte count is normal. Total erythrocyte and leukocyte counts were not made. The Wassermann and Tschernogubow are negative. Constipation is marked.

Treatment and Outcome: Thyroid extract tablets, 5 grs. t. i. d. The improvement has been marked, rapid, and continuous since. The patient is still under observation. The only incident that deserves comment is a rapid pulse which she developed at the end of six weeks; this was taken as a warning and the tablets were discontinued for three days, at the end of which time the pulse is 72 per minute.

Comment: This is the first time that this disease has been recorded in the negro. The preponderating number of such cases are in the female. In this particular case the edematous appearance was only noted in the face. The diagnosis can be made certain in such case by the response to treatment, which is specific. Certainly the fact that the vegetative nervous system was not tested out, is to be criticised.

DISCUSSION OF DR. JAMISON'S PAPER.

DR. EUSTIS stated that he was very much interested in this condition, and had seen quite a few early cases of myxedema with slight swelling of hands and feet. A large percentage of the cases of swelling of extremities Dr. Eustis believes due to perverted thyroid function. The effect of thyroid extract is enhanced by adding 1-30 of a grain of arsenous acid. In a recent case, general metabolism was greatly increased by this treatment as proven by the decreased temperature. Many of these early cases do not go on to the final stages, but remain stationary.

DR. ROUSSEL stated that although many of the journals contain discussions on hypothyroidism, but few mention hyperthyroidism. The former cases have a low mentality. We all know what to do for hypothyroidism, but I want to know what to do with hyperthyroidal cases.

DR. JAMISON, in closing: I believe this condition is especially frequent in the negro female. We frequently see obese women who have taken thyroid extract with bad results, and we should make an accurate diagnosis before administering the drug. Physiologists tell us that a more accurate diagnosis of thyroid increased or decreased is obtained by the vegetable nervous tests. Such as the increased sensibility of the pupil to atropine and homatropin, likewise to eserine and pilocarpin. Replying to Dr. Roussel, the treatment of hyperthyroid has in the past been considered largely surgical, and but little effort has been given towards its relief by medical treatment. We see approximately fifty cases of hyperthyroid to one of hypothyroidism.

MULTIPLE CARTILAGINOUS EXOSTOSES.*

By J. T. O'FERRALL, M. D., New Orleans.

In asking your attention to the subject of multiple cartilaginous exostoses I feel that I am bringing before you a subject of much interest and one which we have studied little until recently. Formerly the condition was considered a rarity but this has been disproved by recent reports of large series of cases; the late review of the entire literature and the report of twelve cases by Dr. Ehrenfried standing out boldly as the most valuable contribution.

According to this complete and accurate review, especially of the cases reported in the United States, six hundred cases have been recorded all over the world in about three hundred and fifty articles. The first case reported in the United States was by Gibney in 1875; this case was again shown by him in 1879. In 1876 he reported a case affected with the condition, as were the patient's father, brother and his three children. Many other interesting cases are referred to by Dr. Ehrenfried and among those substantiating the theory of heredity is a case reported by Dr. H. L. Taylor in which the patient and his three children were affected. The most interesting and remarkable instance of the hereditary side of the condition is that reported by Dr. Percy in which four generations of a family were investigated including one hundred and thirteen people. Of this number twenty-six were affected, twenty-two males and four females.

The etiology of the affection is obscure, however, for the cases most frequently seen are in early life or give a history of having existed since that time. Many patients declare the bony tumors have been noticed since birth and from the fact that so many cases are apparently hereditary this early existence is proven.

Males seem to be affected in the proportion of three to one over females. This proportion holds good in regard to the transmission of the condition. Cases have been reported, however, in which transmission took place through unaffected parents, possibly from a previous generation.

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It is interesting to note that in these cases the exostoses often remain stationary or continue to grow until puberty or until skeletal maturity, when they either cease growing or diminish in size and at times disappear. An instance of this fact will be mentioned in one of the cases reported at this time. Of course in a large number of instances the patients carry the bony growths throughout life.

The symptoms consequent upon the occurrence of these exostoses are very varied and depend directly upon the location and size. Dislocated joints, especially the smaller ones, sciatica, interference with the function of the pituitary gland due to an exostosis in the sella turcica, erosion of a popliteal aneurism, synovitis, mechanical interference of joint motion, paralysis from intra-spinal exostoses, various deformities of the extremities and other skeletal abnormalities represent the symptoms in actual reported cases, with recoveries in some cases after the removal of the offending exostoses. The tumors occur in varying sizes and numbers but as a rule in the proximity of the epiphyses, the shafts of the bones being entirely free. Any joint, even the smallest, may be the site for one or several exostoses. My experience, however, indicates that the joints subjected to the greatest amount of traumatism and motion are the ones most likely to be extensively involved, i. e., knees, ankles, cervical spine and elbows.

The pathology of these exostoses is that of a disturbance of the bone forming cartilage as a basic cause. They are generally benign, less than five per cent of secondary malignant enchondroma have occurred in the reported cases. Abcess formation has occurred as the result of pressure.

The treatment of the condition is usually non-operative. Keeping the patient in the best physical condition and under constant observation until the age of puberty has been reached, with the hope that the exostoses will diminish in size or disappear. At any time that acute local symptoms develop, referable to a particular exostosis, same can be removed and relief obtained. Otherwise operative interference is probably contraindicated, as it often stimulates increased growth. In one of my cases this has occurred but without inconvenience to the patient.

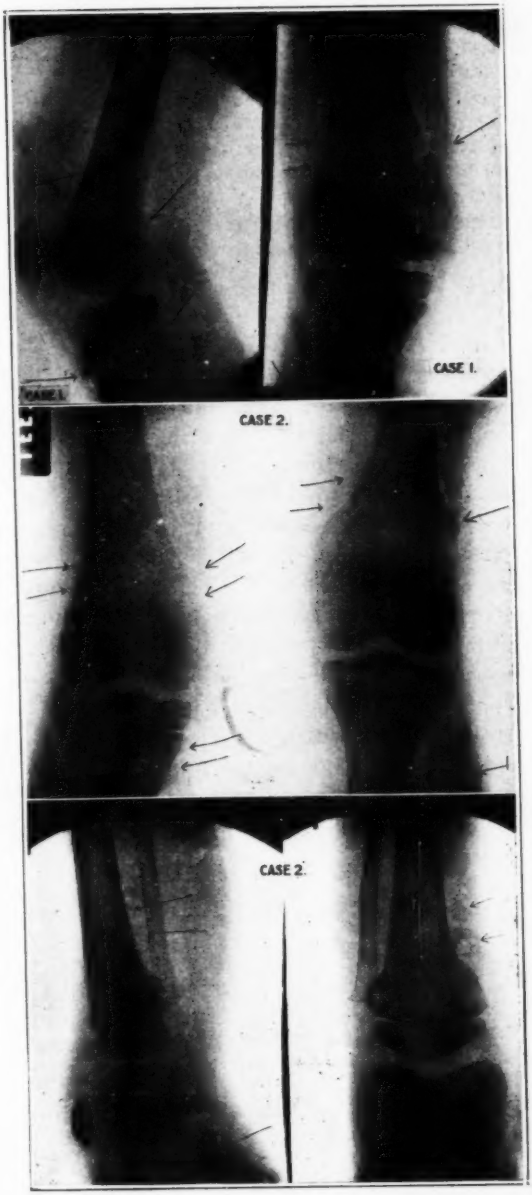
The two cases which I wish to add to those previously reported applied for treatment at the orthopedic clinic of the Touro Infirmary and gave the following histories:

Case 1. Chester L., age 8 years, admitted to the clinic August 24, 1915. His father and mother with one small sister are living and in perfect health. There is no history obtainable relative to the occurrence of exostoses in former generations. The boy has always been well, having escaped the usual diseases of childhood. When three years old he fell from a window and slightly injured his right knee. No trouble was experienced at that time but in the past year the parents have noticed a bony growth over the internal aspect of the right leg just below the knee. In the past few months the growth has developed very rapidly and now is a definite mass the size of a bird's egg.

The physical examination revealed a bright, well developed and nourished boy. Nothing abnormal was discovered except a bony tumor the size of a marble firmly attached to the bone at the upper tibial epiphysis on the inner side. Smaller less resistant tumors were found at the lower femoral epiphysis on the inner side. No other exostoses were found at this time. Radiographic examination was made which showed a large osteo-cartilaginous overgrowth at the upper end of the tibia and several smaller ones above the femoral condyles. The Wassermann examination was negative.

Because of the rapid growth of the tibial exostoses the boy was referred to the ward for operation. A large part of the growth was removed and the recovery uneventful. A radiograph one week after discharge, however, showed the exostosis again growing rapidly. A series of radiographs made a few days ago show the exostosis operated upon apparently stationary and no increase in the size, location or number of the others. His general health is satisfactory and no inconvenience is experienced from the exostoses.

Case 2. Marie M., age 10 years, admitted to the clinic May 9, 1916. The father, mother and two sisters are living and well. The mother denies the occurrence of any miscarriages. No history of the existence of bony tumors in the family could be brought



DR. O'FERRALL'S PAPER.

out. The patient's previous history was negative as she had always been well. For three weeks the left knee had been swollen, greater at night, without apparent cause. No pain was complained of but the knee would stiffen up. For two months previous to her knee trouble the patient had suffered with her eyes and was then being treated by the eye clinic. For a number of months bony growths had been noticed near joints and "under the skin." They have given no trouble; however, have increased in size.

The physical examination presented a thin but well developed child wearing smoked glasses. Her eyes showed a markedly injected conjunctiva and photophobia. A specific iritis existed. A well defined set of Hutchinson's teeth was also present. There was a synovitis of the left knee joint with a large amount of fluid distending the capsule. Full range of motion of the joint, however, was possible and no tenderness found. Exostoses were easily palpable at the lower one-third of the femur on both sides, in the right popliteal space, upper one-third of the left tibia, lower one-third of the left radius and upper one-third of the rt. humerus. A diagnosis of specific synovitis with coincident congenital exostoses was made. The radiographic examination showed a number of exostoses at the sites stated and no erosion of the bones of the joint affected with the synovitis.

The synovitis was treated in the usual way with fixation with adhesive plaster and the patient was advised to continue the iodides given by the eye department. Repeated strapping of the joint was practiced without relief and the joint was aspirated. The first time six ounces of clear amber fluid was obtained. The joint rapidly filled again and a larger amount of the same kind of fluid was obtained with little improvement. Mercury in combination with the iodides was then instituted and the patient promptly began to be relieved from her iritis and synovitis. She has remained well since and is now a very strong healthy girl.

A series of radiographs recently made shows the exostoses unchanged except the one on the left forearm which is much smaller. A new one has appeared, however, at the lower one-third of the fibula.

The accompanying radiographic prints will illustrate to you the character and location of these exostoses around the knee joints of these cases.

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DISCUSSION OF DR. O'FERRALL'S PAPER.

DR. EUSTIS: This subject was carefully reviewed in the **Journal of the A. M. A.,** several weeks ago. I saw a case of a lady of thirty with exostosis some years ago, and recently saw her child, now five years of age, with the same condition. Both cases showing multiple exostosis. In another case, I operated upon a boy with an exostosis as large as an orange. Dr. Batchelor, who was present, believed the case to be one of sarcoma.

DR. DIMITRY: Specific iritis in a child of ten uncomplicated by corneal changes is a rare condition and I am inclined to doubt the diagnosis of specific iritis, believing that the case was one of interstitial keratitis.

SUCCESSFULLY TREATED FRACTURE OF UPPER THIRD OF HUMERUS.*

By LUTHER SEXTON, B. S., M. D., New Orleans.

This case is reported to show the importance of the surgical axiom, that "the fracture should always be in the middle of the splint." This particularly applies to the fractures of the femur and humerus in their upper thirds where strong muscular attachments tend to shorten the limb by over-riding of the broken ends of the bones.

> Mrs. D., age seventy-five, weight 160 pounds, fell from the steps to the hard pavement, a distance of about six feet, striking the shillinger pavement with arm, the entire impact of the body weight, superimposed, producing a transverse fracture of upper third of the humerus. She heard the distinct snap of the breaking bone and found the arm fall by her body upon arising from the fall after assistance came. Preternatural mobility, crepitation, the cardinal symptoms of fracture were present followed by ecchymosis, pain and swelling. The fracture was just below the surgical neck; the lower fragment was drawn inward by the pectoral muscles and upwards by triceps, running from the coaracoid process to the humerus.

She preferred to be treated in her own home, so the advantages of skiagraph picture to show proper reduction af-

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ter application of splint was not possible, nor was the assistance of a general anesthetic. To relax the muscles and overcome the pain a one-quarter grain of morphia and 1/150 of atropia was given hypodermically half an hour before attempted reduction, while the splints, padding and bandages were being prepared. We have found that the right angle cardboard splint, cut to fit the arm so as to hold the forearm and elbow joint as well as the upper fragment is the most suitable splint for this fracture. The upper end of the inside splint which fitted into the axilla was hollowed out and padded so as not to obstruct the return flow of blood through the veins or press upon the brachial plexus. The upper angle of the outer splint was cut from binders board and left long enough to cover over part of shoulder as a cap and to extend up back of the shoulder until the point of fracture was half way between the elbow and end of outer splint. The inside of the splints was well padded before being applied, the angle of the splints at the elbow was rounded off and held by three brads, or rivets. The long extended splint, which came up behind the shoulder was softened by warm water at the shoulder joint so as to conform itself to the body. The fracture was reduced by extension, counter-extension and manipulation, the broken bones were held in position by starched bandages, neatly applied around the splints, the humerus was then bound to the body. This dressing was removed and reapplied at the end of the second week and fracture massaged. At the end of the fourth week it was finally removed, the fracture being united. The arm was afterwards supported by a swing suspended from the neck. We considered this result quite good, considering the age of the patient and the treatment accomplished at home without the aid of accessories of a general hospital.

Mr. A., weighing three hundred pounds, fell upon the right arm, breaking the humerus just below the surgical neck. The X-ray showed the upper end of the fracture drawn outwards, the lower segment drawn inwards, separating the ends of the bone one inch. The great size of the arm and weight of the man made the treatment of this case very difficult. We rein-

forced the bed, by placing wide boards under the springs forming a back splint for the fracture, making a fracture bed out of the ordinary hospital bed. We applied Z. O. plaster to the forearm and extended the arm by Levis extension apparatus just as is done in fractures of the femur. We permitted the patient to lay upon his back and side alternately, thus resting him and preventing pressure ulcers.

After two weeks of extension, we applied the perforated tin shoulder splint and the right angle cardboard splints, keeping the forearm extended, directly forward. The patient made an uneventful recovery. In both cases, the bandages were held in place after having been snugly applied by Z. O. plaster strips or an outer bandage of starched crinolin. In this case, we bound the arm to the body by a wide folder bandage made from half of sheet, and snugly sewed to retain it in position.

The same result in treatment can be duplicated by any doctor, who can properly cut out and apply splints and bandages, always remembering to keep the fracture in the middle of the splint perfectly immobilized. Major surgery usually requires the asepsis of a first class hospital, but the small town and country doctor can learn to treat fractures and do minor surgery without the expense of railroad fare and hospital to his local patient. To all such who have not had an internship experience, we commend the many post graduate courses, where the cutting and application of splints and bandages are a daily precedure. A stock of binders boards and material and accessories, should be in every doctor's office, who attempts surgery. After twenty years experience in treating fractures in a large clinic, we recommend the following general rules and conclusions, which can be modified to suit the particular case: Reduce and apply well padded splints to a simple fracture without waiting for swelling to subside as less pain is produced and better approximation obtained. Hypodermics of morphia and atropin will often take the plpace of a general anesthetic, unless it is a very muscular or nervous patient, with fractures of the femur or humerus, when a general anesthetic is required. X-ray pictures are great helps in diagnosis and seeing that the frac-

tured bones are properly approximated; but by extension, inspection, mensuration and comparison to the well side, the normal position of the parts can be reasonably assured where an X-ray picture is not possible. Nature resents the intrusion of foreign material in any tissue. One surgeon often puts in plates, bands, wire and screws to be taken out by another. Our experience is that good functional results can be obtained in most simple fractures by splints, casts, and bandages properly applied. In compound fractures with over-riding ends and difficulty of approximation plates or bands are indicated.

The Middledorf triangular splint is used more in England than in this country. The triangle of this splint must abduct the lower fragment so as to approximate the upper end of the broken bone. The criticism of the Middledorf splint is its size and confinement necessary to applying the same. It may not be an objection, however, to keep the patient in bed for two weeks in a fracture at the upper end of the humerus in order to secure perfect union.

The anterior and posterior board splint is the best appliance for Colle's fracture. The silicate of potash or liquid glass may do for the arid regions of the West, but softens too quickly in a moist damp climate. Extension and counter-extension are necessary to overcome muscular action in all cases of fracture of the humerus and femur and may be obtained by applying Z. O. straps on each side of the arm or leg to which the weight may be attached after other splints have been applied to hold the fracture in place. Firm fracture beds are as essential as splints in the proper treatment of fractures of spine, pelvis, femur and humerus. Fracture cases that are not able to get into roller chairs should have their beds next to the window to insure plenty of fresh air. The entire body weight should not be supported by a recently healed fracture of leg or femur as the callus will yield and a deformity results.

Downward traction and manipulation of upper fragment ought to bring the two bones together. The inside splint should be so padded that it fills the hollow space next to the chest and prevents the shaft of the humerus from being

drawn in toward the body. The arm is sometimes dressed in abduction to insure better apposition of the fragments. If the skiagraph shows only the separation of the epiphysis or only a small portion of the surgical neck it may be safer to remove it by operation than to risk leaving it as a foreign body in the joint. The sling for fractures of the humerus should only support the hand, as the weight of the arm acts as an extension in the treatment of the fracture. If the fracture is below the insertion of the deltoid, the upper fragment is displaced outward by the deltoid, while the lower is drawn up to the axilla by the triceps and brachialis.

In the treatment of over-riding of the fragment Z. O. plasters can be applied to the arm and a weight applied to the elbow whenever the patient is in an upright position. The elbow and forearm must be immobolized to prevent their motion being transferred to the fracture. The usual cause of fractures of humerus are direct violence, though muscular action as in throwing curved balls has been mentioned as a cause.

The predisposing causes of fracture in these two cases was the insecure footing incident to old age; the direct cause was the impact of the body upon the arm against the hard surface. The extravasation of blood is usually more marked when a large bone is broken, the blood being distributed in the line of least resistance causing a large area to become very dark and ecchymosed, though unaccompanied with much pain or swelling except at the seat of the fracture. The fracture of the humerus should not be unnecessarily manipulated on account of the sharp edges of the broken bones and the proximity to the large nerves and blood vessels. Only the extension necessary to reduction with proper manipulation should be employed. The larger the bone broken the greater the age of the patient, the more liability to shock and hemorrhage following the injury. We may expect a rise of temperature from such a fracture after the first twenty-four or forty-eight hours, lasting from two to four days. The absorbtion of fibrin ferment has been given as the explanation of this traumtatic fever. In habitual drunkards and neurotic and debilitated individuals you may have deler-

ium tremens or traumatic insanity following the break of the larger bones of the body. Proper reduction is no more essential than perfect immobility of both fragments of the fracture, which is usually accomplished by suitable splints, plaster of Paris, and proper suspension of the fractured limb. We have had no experience with fat embolism resulting from broken up fatty tissue and absorption following the fracture of large bones in which the medullary fat is ground up into the fracture. The fat seems to be filtered out of the circulation through the functions of the lungs and kidneys; fatal recorded cases of fat embolism have been from dyspnea, syncope and coma. These symptoms rarely occur before the third day or last more than a week after the fracture. Some surgeons have advised the open method of treatment of fractures of the humerus; when the upper fragments of the break was so short and devoid of blood supply that its chance for atrophy seemed probable, and union with the lower fragments seemed impossible. The small upper fragment in some cases of this kind has been known to atrophy and act as foreign substance in the joint, necessitating their removal at some later period. In very thin persons or when the skiagraph shows the separation of ephyphises,it might be admissible, but we have always been dubious of the advisability of converting a simple into a compound fracture, especially when a joint is involved. The same violence, which causes the fracture near the joint may also cause a dislocation, which as a matter of course, should be corrected under an anesthetic at the same time that the fracture is reduced. The possibility of non-union in fracture of the humerus close to a joint should always be kept in mind. Too much manipulation of the part should be avoided in order not to destroy any periosteal connection about the fractured end of the bone. At the point of fracture a rarefying imflammation takes place, plasma exudes into the tissue, connective tissue cells proliferate so that the broken ends of the bone are enveloped in a fibrino-plastic exudate which is changed by vascularization from adjacent vessels into granulation tissue, which is afterwards hardened by the deposition of osteoblasts. For all of these minute processes to go on undisturbed, resulting in

the perfect union of the bone, it is necessary that the fractured end be immovably fixed, and it is for this reason that the suggestion of treating fractures of the arm or leg in splint dressings should invariably be suspended in a swing attached to the tops of the bed so that the ends of the bones are not pulled apart by the movements of the patient.

DISCUSSION OF DR. SEXTON'S PAPER.

DR. A. C. KING: In many cases of fractures of the humerus, we have to operate whether we want to or not. The patients are more liable to infection immediately after injury, hence it is desirable to wait from eight to fourteen days before operation. The kick of an automobile crank is an oblique fracture. Board splints are liable to pressure atrophy. The Walker apparatus is excellent, but expensive. The molded plaster splint is cheaper and satisfactory.

DR. K. W. NEY: We are inclined to be afraid to operate following fractures. Lane emphasizes the fact that the open method is most satisfactory providing the tissues are not handled. All who do the open method favor it. There is comparatively little increased risk, if we are clean. The X-ray is indispensable. The device of Drs. Parham and Martin is an excellent one. In compound fractures, we nearly always have infection. The bacterial count should always be made. After the eighth or tenth day, if properly treated, the bacterial count is usually much diminished, when the mechanical fixation of the fracture may be safely and permanently made. The failure of mechanical fixation of fractures is always due to defective technic or to the introduction of foreign bodies before the wound is in proper condition for such treatment.

DR. L. J. GENELLA: Among the causes of delayed healing of fractures of the humerus, is too short complete rest in bed. The latissimus dorsi, the largest muscle in the body, is attached in such a way that unless the patient is in bed, it is impossible to immobilize the part by any mechanical means.

DR. SEXTON in closing: The several gentlemen who have discussed the paper apparently missed some of the points that it brought out. Those of us who were trained in hospitals some twenty years ago were taught very little of the open method of treating fractures, yet most excellent functional results were obtained.

Replying to Dr. King: The advantage of using the board splint in Colles fracture is that we are better able to move the fingers and wrist, also that massage can be employed decreasing the period of disability. I hoped more discussion would be brought out concerning the necessity of placing the fracture in the middle of the splint and immobilizing joints nearest the fracture.

Replying to Dr. Genella: The Middendorf splint so extensively used abroad is a very cumbersome apparatus, and I believe that part of its advantage is that it keeps the patient flat in bed. I believe that plaster is as good as a splint in fractures of the leg. Splints have the advantage that they can be easily removed, which with massage and manipulation, lessen the possibility of paralysis and aukylosis.

Replying to the argument for the use of plates in simple fracture, I have had such splendid functional results by the use of splints, bandages and plaster of Paris that I have not found it necessary to introduce a foreign material into bone structure, particularly is that true of the two cases just reported where the fracture was so near the shoulder joint that the plates would have been a part of the articulation had they been inserted. In the body of my paper I endorsed the use of plates in over-riding compound fractures after nature had coffer dammed the tissue. The asepsis of applying bone plates is impossible of accomplishment except in a first-class hospital. We sometime run to fads in our method of treatment. I have seen a simple fracture of the ulna plated when I am sure it would have gotten well if merely suspended in a sling. I sent in to the Charity Hospital last week a poor fellow who had been on crutches 12 months whose tibia had been plated for a simple fracture and who has no union to-day. The periosteum is to the bone exactly what the skin is to the surface. Bands or plates necessarily destroy the periosteum. Bands around the growing bones of younger subjects would not be endorsed by any one. So long as we can secure such splendid functional results even with a mild deformity is better than the plate in the case which I spoke of with non-union at the end of 12 months' treatment.

COMPLETE VS. INCOMPLETE HYSTERECTOMY.*

By E. L. KING, A. B., M. D., New Orleans.

(From the Department of Obstetrics and Clinical Gynecology, College of Medicine, Tulane University of Louisiana.)

Incomplete, or supravaginal, hysterectomy is stated by most authorities to be safer than complete hysterectomy. Norris[1], however, says that his study of statistics shows very little difference in the mortality rate. The dangers are stated to be, first, increased blood-loss due to more extensive dissection; second, infection due to the opening of the vagina; third, increased danger of ureteral injury. On the other hand, the possibility of carcinoma developing in the cervical stump, the danger of leaving the cervix in the case of a sarcomatous fibroid, and the persistence of an annoying leucorrhea from an infected cervix, must be considered.

Several cases which have come under the observation of Dr. C. Jeff Miller and his assistants during the past few years have caused us to consider this question seriously. Case 1 was a case of inoperable carcinoma of the cervical stump; the patient was a physician's wife whose uterus had been removed for tumor *fifteen years* previously. Case 2 was apparently an ordinary fibroid; supravaginal hysterectomy was performed, and the pathologist reported myosarcoma. She died of recurrence in less than a year. Case 3 was a similar case; the cervix was subsequently removed by the clamp method. She developed pyonephrosis, no doubt induced by pressure of recurrent masses on the ureter. The kidney was removed, with entire relief for several months. Later, a similar condition developed in the other kidney and caused her death. Case 4 was also a fibroid case, in which the cervix was negative on vaginal examination. Supra-vaginal hysterectomy was performed in the summer of 1916, and on examination early adenocarcinoma, springing from the upper portion of the cervical mucosa, was found. The cervix was removed later from below. This patient is still doing well, but has a small recurrent nodule which I am treating with radium. Cases 5, 6 and 7 were infectious cases in which it was necessary to remove the cervix later on account of troublesome

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leucorrhea. We have also seen several cases of this latter class which have not been subjected to a secondary operation. We cannot, of course, say positively that the ultimate results in the above mentioned malignant cases would have been different had a complete hysterectomy been done, but the chances of subsequent trouble would certainly have been lessened, especially as in these cases (2, 3 and 4) the malignancy was confined to the body of the uterus.

A search of the literature reveals considerable discrepancy in the reported percentages of malignancy in fibroids. Chas. P. Noble[2], in a study of 2,274 cases, gives the following:

Carcinoma corpus uteri	42,	or 1.8%
Carcinoma cervix uteri	16,	or 7%
Sarcoma	34,	or 1.4%
Chorioepithelioma	2,	or .001%
Total	94,	or 3.9%

Graves[4] puts the figure for sarcoma as between 1 and 2%, and also states that the sarcoma of a fibroid is the least malignant form of uterine sarcoma. Tracy[8], in a study of 100 cases, found 7 cases of carcinoma of the body of the uterus, 2 of the cervix, 1 of the ovary (secondary in the uterus), and 1 case of sarcoma of the uterus. But, as he remarks, it is wrong to draw conclusions from so small a number. In a previous study of 3,561 fibroid cases, reported by various authors, he found the malignancy to be 4%; he also quotes several authorities, who reported malignancy varying from 4 to 8%, with a higher percentage in women over 40. He is of the opinion that the increased percentage of malignancy in recent reports is no doubt due to better laboratory facilities and more careful study of the tumors.

Complete hysterectomy would also seem to be indicated in the cases of pelvic infection (chiefly Neisserian), in which the involvement is so extensive that both tubes and ovaries must be sacrificed. Norris[3] states that, in dealing with a gonococcal lesion of this character, it is better to remove the uterus, either by a complete hysterectomy or by the supra-vaginal method, being sure to core out the cervix, removing or destroying *all* the

mucous membrane. We know that the deep cervical glands will harbor the gonococci almost indefinitely, and thus cause persistent leucorrhea and continue to be a potential source of infection. Dudley[5] says: "If in consequence of great infection it becomes necessary to remove the uterus, the surgeon should avoid the half-way measure of removing only the corpus, for if the cervix be left it may continue to be the source of persistent and pernicious infection in the adjacent structures, even to the extent of filling the pelvis with stump exudate. In fact, to remove the corpus and leave an infected cervix would be inexcusable, for the cervical glands are especially adapted to the reception, the retention and the distribution of infection."

Let us consider the arguments in favor of supra-vaginal hysterectomy and the relative mortality rates of the two operations. Graves[6] states that if complete hysterectomy were performed as a routine for fibroids, the mortality would be higher that the incidence of malignancy in the cervical stump. Crossen[7] takes a similar view, saying that the technical and physiological advantages of leaving the cervix are beyond question. Noble[9] says that, in all cases of fibroids in which there is no positive indication for removal of the cervix, he does a supra-vagnal amputation. Tracy[8], in 84 cases, performed 64 supra-vaginal amputations with one death (due to pneumonia on the eighth day), and 20 complete hysterectomies with 1 death (due to renal insufficiency 52 days after the operation). Deaver[10] states that supra-vaginal amputation is the operation of choice, being simpler and less liable to infection and other complications than the complete operation. Several of these authors also mention the fact that in the incomplete operation the pelvic floor and the utero-sacral ligaments are not so much disturbed, and that thus better anatomical results are obtained. None of them give exact figures as to the relative mortality. There is no doubt that, taking into consideration all cases in which hysterectomy is done, the supra-vaginal amputation is easier and safer, but we wish to bespeak a more frequent resort to complete hysterectomy in properly selected cases.

During the past few months we have been performing the complete operation much more frequently, using the technic described by Crossen[11] and by Baldwin [12]. The infundibulo-

pelvic, broad and round ligaments and uterine arteries are clamped and cut as usual. The bladder is freed from the anterior uterine wall, as in the incomplete operation, but the dissection is carried further to the sides, which minimizes ureteral injury, and downward until the vagina is uncovered below the cervix. This is determined either by catching the vagina between the thumb and forefinger, or by tapping it and eliciting a hollow sound. Strong traction is made upon the uterus, the anterior wall of the vagina is opened, and the anterior lip of the cervix is caught and pulled upward out of the vagina. The vaginal wall is clamped from before backward, and severed. When properly done there is no bleeding from the cut edges of the vagina, all vessels being clamped before cutting them. In some cases, the vagina is left partly open, and the gauze then acts as a drain. Gloves and instruments touching the vagina are discarded, and the stumps of the broad, round and infundibulo-pelvic ligaments are sutured to the vaginal stump. Previous iodinization of the vagina, using a 3½% solution, is important in order to minimize the chances of infection. Neglect of this precaution was no doubt responsible for the loss of a patient last summer. About twelve days after the operation, this woman had several severe secondary hemorrhages from the vagina (no doubt due to sloughing), and died as a result.

The operation has been performed most often for fibroids (as a rule with badly lacerated cervices), also for the severer types of pelvic infection. A review of the last 13 cases (11 fibroids and 2 infections) shows that the patients have convalesced nicely, though all of them have had fever, highest as a rule the day following the operation. The earlier cases had higher fever, 102 to 104 degrees; the later ones have averaged 101 degrees the following day, becoming normal soon thereafter. We believe this to be due chiefly to improper preparation of the vagina, and will not be content until the convalescence becomes practically afebrile. On comparing these with the last 13 supra-vaginal amputations (10 for fibroids and 3 for infection), we find that these cases have also had fever, which, as a rule, did not last as long as that after complete hysterectomy, and averaged about a degree lower. This also

should be reduced. We must bear in mind, however, that all these were rather difficult Charity Hospital cases, and that the fibroids were practically all complicated by infecctions of the adnexa.

From a consideration of all the above factors, we are of the opinion that, *granted that the operator is sufficiently skilled in pelvic surgery,* complete hysterectomy is indicated (1) in fibroid cases where the cervix is badly lacerated or infiltrated; (2) in easy fibroid cases, with no complications, in which the complete operation will add very little to the duration or danger of the procedure; (3) in the severer types of pelvic infection, especially Neisserian, with a badly infected cervix; (4) in some cases where drainage is desired, when the vagina can be left partly or completely open for this purpose. *But* we would not advocate it when the condition of the patient is poor or the local lesion is such that the removal of the cervix would present technical difficulties that would outweigh the advantages to be gained. A live patient with a cervix is better than a dead patient without one.

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DISCUSSION OF DR. KING'S PAPER.

DR. PHILLIPS: The operation of complete hysterectomy is more difficult and every case must be suited individually. A young woman with a fibroid, no malignancy, cervix in good condition, would justify a partial operation. Whereas the reverse would necessitate a complete hysterectomy. It is important that we cauterize neck of the cervix. By working under the cervix, the operation is simplified.

DR. EUSTIS: I would like to ask Dr. Phillips why he used iodoform gauze and why the surgeons are still using it. It is certainly very difficult to sterilize.

DR. HARRIS: The Doctor mentioned potential malignancy. By this, we mean that the patient shows certain marked changes, of which although not cancerous, are more prone to become so. There are no such findings as to justify a precancerous stage. The surgeon should give the pathologist more details about specimens sent.

DR. MAURICE GELPI: The tendency to-day, unquestionably, is to do more complete hysterectomies. Yet, it cannot be denied that in the hands of most of us, both the mortality and morbidity are considerably greater when the cervix is removed than when it is left in. For these reasons, therefore, pan-hysterectomy cannot be advocated as a routine measure without exception. When for some

reason or other, it is deemed safer to do supravaginal amputation, I found that the reaming out of the cervical canal with a sharp knife is a very useful, compromise measure. By this means, practically the entire cervical mucosa can be removed without the attendant difficulties or dangers of complete hysterectomy.

Another point of value in connection with the avoiding of post-operative infection from the vagina, consists in careful preliminary iodinization. For the past two or three years we have been preparing the vagina by mopping out with one to 1000 iodine and benzine, drying and flooding the vagina with 3½ per cent tincture of iodin. In some instances we have poured in the iodin with a tablespoon—occasionally the iodin has been injected into the cervical canal with a syringe. By this means we believe that many times we have avoided the post-operative cellulitis, which appears in the form of an indurated, painful rind, occupying the cul de sac or lateral fornices, following a pan or supravaginal hysterectomy.

MEDICAL UNITS IN THE FIELD.*

By O L. POTHIER, M. D., New Orleans.

In presenting this subject for your consideration I feel that it is one that is not well understood by the majority of medical men and less by the general public. The medical Department of any army is one of the most important branches of the service, on account of the responsibilities that devolve upon it, and which I will endeavor to demonstrate this evening.

Though we find the Roman armies, and those of the middle ages were provided with physicians, the medical service was either voluntary or of such a nature as to render it almost useless. Really it was not until the Napoleonic wars that we find a semblance of organization of the medical service. It is true that in 17000 some amelioration had been made, and in 1725 partly mobile hospitals were used, yet is was during the Napoleonic wars that the litter bearers made their appearance, and that the barber-surgeon was supplanted by trained surgeons. In 1850 light field hospitals were organized to accompany troops, and during the Crimean war litter bearers forming part of them were established. At this time three was no method to transport the injured to the rear. It was during the Civil war, with the change of weapons that the need for such organization was felt, and that Medical Director Letterman introduced his plan of transportation, the independent Ambulance Corps. He did this on his own initiative, though it was opposed by the then Commander in Chief. In August, 1862, General McClellan impressed with their efficiency issued an order accepting them. In 1864 Congress finally passed an act establishing a uniform system of ambulance service throughout the military forces.

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Since the medical, or as they are now designated the sanitary units, in the field have been amplified and organized so that they work conjointly and give early and prompt relief to the sick and wounded.

As constituted now the Medical Department of the Army is composed of the Medical Corps, the Medical Reserve Corps, the Dental Corps, the Dental Reserve Corps, composed entirely of comissioned officers; the enlisted personnel of the Medical Department, composed entirely of enlisted men, and the Nurse Corps, composed entirely of nurses. According to new regulations the Hospital Corps has been abolished as such and becomes the enlisted Personnel of the Medical Department. The administration of The Medical Departmnt during peace and war is vested in The Surgeon General of The Army, who transmits his orders through the different department surgeons, they in turn to the division surgeons and post surgeons, the division surgeons to the regimental surgeons and the unit commanders.

The units in the field are the following: Battalion Sanitary personnel, 1 captain or 1st lieutenant and 8 enlisted men; Regimental personnel, 1 captain or 1st lieutenant and 33 enlisted men; Ambulance companies, 5 captains or 1st lieutenants and 150 enlisted men; Field hospitals, 1 major, 5 captains or 1st lieutenants and 73 enlisted men. Camp hospitals the personnel of which is not yet organized as it is a new unit.

Before taking up the duties of the different units, I wish to call your attention to those of the medical officer and his requirements. Since I have been in command of sanitary troops, I have been asked so frequently about the duties and requirements of the medical officer, that a consideration of them now will not be amiss.

First of all he must be proficient in his profession, prompt in making a diagnosis and arriving at a decision; able to diagnose and treat any form of ailment, in emergency able to perform any operation, whether pertaining to general surgery or special surgery; for there will be moments where he will be obliged to act and act promptly, without the opportunity for advice, having to rely entirely on his own judgment and resources, having for assistants only his enlisted personnel. In

other words he must possess all the qualities that go to make an able physician and surgeon. He is the guardian of the health of the troops with which he is serving, and is responsible for their efficiency. He is responsible for the inforcement of all regulations covering sanitation and hygiene, and when overlooked by his Commanding Officer or other line officers, must report these facts and insist that his recommendations be observed. When it comes to the sanitation and all measures pertaining to the health of the troops, he is well nigh supreme, and he can enforce any regulation calculated to maintain the sanitary conditions of camps, posts, and troops; for he will be held strictly responsble for any infraction of sanitary regulations, or the appearance of any preventable disease. Though of inferior rank and under the command of the commanding officer, the latter leaves all medical matters in his hands. It devolves upon the medical officer to be on the alert and to report all infractions to the commanding officer, and should the latter pay no heed to his suggestions and reports, to then go higher up and demand recognition, which is usually granted. It is rare, however, that such measures are needed, for the line officer of today realizes the importance of the regulations of the Medical Department, and abides by them. The medical officer, whatever may be his rank, must be ready, at a moment's notice, to assume whatever duty that may be assigned to him by the head of The Medical Department; for he may be transferred from one post to another at any time. There is one thing that he must constantly, and especially during warfare, keep in his mind, and that is to preserve the efficiency of the command with which he is serving, so that it will always be ready to do service, that it will not be encumbered by non efficients. These should be removed at the earliest possible moment and in such a manner as not to hinder the work of the efficient. In combat this is of paramount importance. He is and should be further an adviser to his commanding officer.

Besides his medical ability the medical officer must be a military man, and possess all the qualities of a line officer. He must be a tactician, understand map reading, the elements of strategy and of tactics sufficiently to deduct the consequent results. Learn to obey implicitely orders received and execute

them to the letter and immediately. When in command distribute and co-ordinate the sanitary troops under him so that they may be of the greatest utility to the combatant. It is on officers of the Medical Department that devolves the duty of insuring relief and order during and after an engagement, and this promptly and with the least possible suffering to the injured, without interfering with the combatants troops. It devolves upon the medical officer to return to the front malingerers, to see that the wounded and sick are properly treated and directed to the rear. During marches he must know the usual rate of march of the units he is with and see that the men are not overtaxed. The rate of march of infantry and foot troops is 2 ¼ to 2 ¾ miles per hour or twelve to fifteen miles per day, cavalry 3 ¾ to 12 miles per hour or 25 miles per day, artillery alone 15 to 20 miles per day, wagon trains the same as infantry 12 to 15 miles per day, depending on the roads. Besides this the medical officer must be familiar and know how to prepare the different paper forms of the service, numbering about 450 different forms, including reports returns, sick reports, etc., too numerous to be enumerated; he is responsible for the proper preparation of these papers. Added to these duties the medical officer has to make the examination of all applicants and is responsible for all recruitis enlisted. From the foregoing we can very well say with Dr. Bloodgood that "The medical profession is the nation's first line of defense."

Having considered the most important duties of the Medical Officer, we will now pass to the duties of the Medical Units in the field.

The medical units in the field are: The battalion sanitary troops, the regimental sanitary troops, ambulance companies, field hospitals, station for slightly wounded, camp hospitals, evacuation hospitals, base hospitals, to which may be added the general hospitals of the interior, though not properly belonging to the field, yet in relation with the field units by the number of cases sent to them. To understand the functions of the different units one has to understand the units composing an army, and their distribution in the theater of operations.

The tactical unit is the division, which embodies within itself

all the different arms of the service and renders it able to operate alone. An army corps is composed of two or more divisions, a division of two or more brigades, a brigade of two or more regiments, a regiment of three battalions, except artillery, a battalion of four companies, except artillery, a company of two or more platoons, a platoon of two or more sections, a section of two or more squads, a squad of eight files. The division is commanded by a major-general and among his staff is the Division Surgeon, who is both a staff and commanding officer, having under his command all the sanitary troops of the Division, which are equivalent to two regiments or a brigade. Besides the sanitary troops attached to the line troops the division has a sanitary train composed of 4 ambulance companies, 4 field hospitals, 4 camp hospitals. During the march these units march with the trains of the division at the rear; the road space from the head of the division to the rear being from 12 to 15 miles, or one day's march. The ambulance companies are under the immediate command of the director of ambulance companies, and the field hospitals under the immediate command of the director of field hospitals, these directors are under immediate command of the division surgeon.

The theater of operations is divided into the zone of the advance, the zone of the lines of communication, the base, the service of the interior. The theater of operations is under the direction of the Secretary of War; the zones of the advance and of the lines of communications are under the command of the commanding general; the zone of the lines of communications is under the command of the commanding officer of that zone. The sanitary troops extend from the zone of the advance to the service of the interior. At the front immediately in the rear and as close as possible to the firing line are the regimental aid stations, situated in the rear of their regiments. To these the sick and wounded are directed and assisted by the enlisted personnel assisted by the members of the regimental bands acting as litter bearers; the sick and wounded are from these stations carried about two miles to the rear. The ambulance companies dressing stations, situated about two miles to the rear. The ambulances ply from the dressing stations to as near the front as is prudent, sending also forward their litter

bearer sections, the ambulances transport the sick and wounded to the rear in the lines of communications to the field hospitals situated 5 to 6 miles to the rear or further depending on circumstances and the weapons used. In the rear of the field hospitals, which are situated in the lines of communications, ambulance companies called evacuation ambulance companies evacuate the sick and wounded to the evacuation hospitals and camp hospitals. These latter are a new unit and up to now have never been used, their position is somewhere near the evacuation hospitals or base hospitals, but their position has not yet been determined. Near these are the stations for the slightly wounded, who after being detained long enough to recover from their wounds are distributed to the base hospitals and the hospitals of the interior. From the evacuation hospitals and camp hospitals the sick and wounded are transported by hospital trains and ships, to their final destination. From the moment that an enlisted man of the medical department finds a sick or wounded soldier the latter is tagged with the diagnosis tag, the diagnosis and treatment being written on the tag by a commissioned officer at the aid station. This tag is not removed until the patient is received in a hospital where final disposition is made of him. These tags are then collected and sent back to the regimenttal surgeon to whose regiment the patient belongs, so that the surgeon may complete his casualty list, which is forwarded to the division surgeon. This is done after each engagement, so that the commanding general is kept informed of his casualties and of his effective strength.

To enable the division surgeon and the directors of ambulance companies and field hospitals to estimate the requirements for transportation and accomodations for the sick and wounded the following is used, which is only approximately correct and should be considered absolute: Forty per cent of the casualties will not need transportation and 60% will need transportation. This is divided as follows: Twenty per cent killed, 8% non-transportable, 12% slightly wounded and able to march to advance base section, which gives the 40% not needing transportation, 28% able to walk to dressing stations and field hospitals, 20% requiring transportation sitting up, 12% requiring transportation recumbent, which gives the 60% per cent requiring

transportation. Using this table as a guide and estimating the approximate casualties of an approaching engagement the disposition of the division surgeon may be taken at the beginning or during combat to meet the eventualities. One ambulance will accomodate 4 recumbent patients and 1 sitting up, or 9 sitting up. Added to these the returning ammunition wagons will accomodate 3 recumbents and 1 sitting up, or 6 sitting up. The division surgeon has 48 ambulances and approximately 12 wagons per regiment engaged at his disposal.

At the aid stations the sick and wounded are given the first treatment, and those treated on the field are verified and sent on to the dressing stations, or to the station for slightly wounded. At the dressing stations the dressings are readjusted, replaced, fractures verified and if necessary the dressing readjusted, the wounded and sick are given food and refreshment. The cases are here separated into severely and slightly wounded, and they are immediately evacuated to the field hospitals or evacuation hospitals. Only very urgent cases are operated on at the dressing stations. Usually this practice is discouraged and the cases are generally sent to the field hospitals, which are better prepared to take charge of such cases. All cases at the dressing stations must be either transported back to the rear to the field hospitals or those able to walk are sent to the rear in charge of sanitary personel to the station for slightly wounded or to the field hospitals. At the field hospitals cases are admitted and treated, those who necessitate long treatment, such as fractures and operative cases, who can stand transportation are sent to the rear to the evacuation hospitals; only emergency cases are operated and treated and then evacuated. No case is permanently admitted to the field hospitals, for they are mobile organizations and move constantly to keep in touch with the troops. The cases that are light and recover in a few days are discharged and returned to the front, for the medical officer must not lose sight of the fact that he must maintain the efficiency of the troops. His aim must be to cure as rapidly as possible and return to the front as many as he can, for it is one of the functions of the medical department to keep up the efficient strength at the front.

As we see it is at the front and in the lines of communica-

tions that the medical is most efficient. It is here that the skill of the medical officer will show itself in the treatment given in the first instance and in the timely operative interference on cases that cannot wait. It is for this reason that the men here must be constantly on the alert to keep everything moving so that all the sick and wounded will get the promptest and best attention, for it is here that a delay or an error in treatment may cause the loss of many lives which could have been spared. I cannot refrain from again repeating that implicit obedience to orders is paramount; one has to learn to sink his individuality and work for the good of the larger number, apparently neglecting individual cases, remembering always that efficiency is what is required whatever may be the cost, and efficiency in an army is the saving of the greater number to return to the front and increase the fighting efficiency of the force. The medical man that enters the service with the idea that he will be given opportunity to do brilliant operations and the like better not enter, for he will be sadly disappointed. These cases are exceptional, and are of no military value, for the subjects are nonefficients and are consequently lost to the efficient force. The surgeon that attends to details and returns the greater number to the front is the one in a military sense who does the greatest work. This principle, apparently inhuman, is, however, the most humane, for it shortens the war by giving his country the greatest number of fighting men. In these days of formidable weapons and warfare these requirements are difficult of fulfillment, yet their attainment is what all military surgeons should strive for.

Last and not least, the medical officer should instruct his sanitary personnel in the fact that they are noncombatants and that they are the messengers of peace on the battle field, and that they should treat the sick and wounded with the greatest regard though prompt in their attention. That this attention is to be given to the wounded of the enemy as well as to those of our own army. They should mitigate the sufferings and hardships of the soldiers at all times and comfort them when in need of medical attention. The medical profession here as elsewhere continues its mission to humanity.

CAMP SANITATION AND THE TRAINING OF SANITARY TROOPS.*

By W. A. LOVE, M. D., New Orleans.

By the term Sanitary Troops is meant those soldiers that are enlisted to serve under the direction of the officers of the Medical Corps, and while their duties are for the most part truly sanitary in character in times of peace, these men must also have such training as will fit them to care for sick and wounded in time of actual hostilities. It is necessary that the hospital corps man shall have a wider and broader education than the soldier in other branches of the service and this necessitates that the corps men shall be selected and not picked at random. Qualifications for the enlisted personnel of the hospital corps are peculiar in that a man who has no natural inclination or liking for the work cannot be made a valuable soldier in this line unless he possesses a natural aptitude, and to enlist in the sanitary corps without this aptitude will mean that the soldier will be discontented for the full term of his enlistment.

Having in hand a body of men for service with the medical department, there is necessary the appointment of noncommissioned officers and also of others to act as saddler, horseshoer, farrier, cook, teamster, mechanic, etc., each having to be trained to fit his position and to do the work apportioned to him. In addition to the training that these "Specialists" must receive, each of these and the remaining privates must receive the same general education to fit them for the trying and exacting duties that shall fall to their lot in the care of their injured comrades.

We will discuss briefly, and first of all, what character of training the men as a whole must have.

Many persons unfamiliar with military life will ask why it is necessary that the sanitary troops shall spend so much time in drill work upon the parade ground? It is true that in the care of the wounded there is little time to follow prescribed rules and regulations as to drill, but this very necessary exercise teaches discipline and the obedience of orders.

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It also teaches teamwork which is so essential to the successful accomplishment of large bits of work that must be done speedily and without lost motion. After a soldier has had a few weeks of training on the drill ground, he instinctively learns to obey orders without questioning, and to do immediately and accurately what he is told to do under any and all circumstances. Considering conditions that might make in necessary for medical corps officers to collect wounded while under fire, this unquestioning discipline can be seen to be absolutely necessary. The men learn to look to one head for orders and to obey the direct will rather than their own inclinations. Therefore, in field service, the time of at least two hours per day is allotted to actual foot or mounted drill.

To detail the character of the drill with which the medical corps officer must be familiar before he can properly instruct, we will divide the drill into two parts: 1st. Dismounted or Foot drill and 2nd, Mounted and Transportation drill. In the dismounted drill, the men are maneuvered in squads, platoons or files in a manner resembling infantry drill, and are taught all of the essentials from the elemental school of the soldier to the proper handling of himself in the more intricate and double time movements and platoon formations. In addition he must be taught the systematic handling of the litter, both loaded and unloaded, and must be schooled on the passing and crossing of obstacles. He must know also how to load a patient into an ambulance, how to improvise a litter when none is at hand, and also how to carry a patient with comfort both to himself and the patient without the use of a litter. This last training may seem superfluous, but let two of you try to pick up and carry a man weighing 160 pounds without teamwork and see what a task it is and how comfortable an experience for the patient. After training, it is an easy task for a hospital corps man to place upon his back another who weighs twenty pounds more than himself and carry him with ease.

The mounted drill is divided into the teaching of horsemanship to the individual, and the handling of four mule wagons or ambulances, either in wagon or ambulance drill

or in line of march. Not only the actual handling of the animals but the care of them must be learned and the Medical Corps officers must be the teachers. Those of us who have served recently in federal service have had to give this instruction and what we did not know we had to learn, and all of it had to be done just so. Of course the animals suffered and we know that the old army horses and mules had many a laugh at our expense, but we had to learn in the only school available, that of actual experience. Two hours per day were alloted to horsemanship and the training was compulsory. It is necessary that medical troops shall be versatile as they may be called upon to serve with mounted troops as well as infantry and base hospitals. Under the new regulations of the army, teamsters are not supplied to the sanitary troops from the quartermaster corps and certain of the men have to be trained to handle four mule teams or to drive motor trucks under any and all circumstances. It looks simple to say that a man must drive four mules or a truck but when he must maintain his place in a line of march over all kinds of roads and under unfavorable conditions, that man must be a teamster in the true meaning of the word. The medical corps officer must teach this work whether he knows how or not. He must learn how and usually he must teach himself.

The work of the hospital corps in the field, and especially of the field hospitals, has been likened to that of a six ring circus in that where there are sick and wounded to care for, there is canvas to be erected to shelter them. The canvas of a field hospital when completely put up covers about one city square and all must be put up according to regulation. This takes training and teamwork, therefore drills must be frequent in the pitching of shelter tents, wall tents, hospital tents, flies and the voluminous 300 pound ward tents. These latter require eight men to erect and they accommodate 32 patients. There is the bedding for sick and wounded that must be unpacked and laid out, the nurses to be provided and the patients to be fed, and all of this must be done according to the book, and the medical officer must boss the job. The men are there to do the work, but not the think-

ing. To learn the handling of the field canvas alone takes some six months of instruction in order to have the necessary system in an outfit. The line troops arrive at a bivouac and erect shelter tents and are ready for the night, but the corps men must make the camp for themselves and then must build the tented city to care for the wounded. How to do this is not learned in a day and daily practice is necessary to obtain speed and efficiency.

The trained hospital corps man must have instruction in first aid, nursing, the action of drugs, hygiene, camp sanitation, dietetics, application of splints and dressings, and operating room work. At least one or two hours per day of lecture work and practical demonstration over a period of one year, at the shortest, must be given to obtain efficiency in these lines. The medical corps officer at last finds something to teach that he knows something about, but even here he must formulate his instruction so as to give practical and valuable knowledge rather than theoretical training. Although better acquainted with this part of his daily work, the writer found it really the most difficult as he had to remember at all times that he was teaching men from all walks of life and not medical students and must make the instruction interesting.

All of the enlisted men had to be taught the most important lesson that a soldier can learn, that of personal hygiene. He must know how the rules of bodily cleanliness, clothing cleanliness; cleanliness of mess hall, quarters, bath rooms, outhouses, and sexual cleanliness. All of these things must conform to a regulation and the officer must see that the regulation is enforced. Only by constant watching and reprimanding of the delinquents can the habit of cleanliness be taught, and the lesson once learned results in healthy conditions for the organization. The Medical Corps sets the standard for all of the troops in hygiene and sanitation and the medical corps officer who has poor sanitation in his own enlisted personnel cannot expect to exact cleanliness of the line troops.

What has gone before is briefly the character of training necessary for the enlisted men of the sanitary corps as a

whole, but certain special training must be given those non-commissioned officers who are to act as competent foremen to the commissioned officers. Sergeants must be trained to the duties of drill instructor, stable chief, office chief, mess supervisor, supply sergeant, and medical property sergeant. They must be trained to act both in garrison camp and in the field. They must be able to perform the duties varying from those of anesthetist to head nurse, and from kitchen and commissary steward to chief teamster. Each may have his specialty but the training must be such as to make it possible to shift one to the duties of another. The lectures and instruction to these non-commissioned officers must be separate and in addition to that given the privates; and the medical corps officer has to learn all of these lessons so that he can give the proper instruction.

Additional instruction is also necessary so that the men may learn the rules of military custom. To this end, a course in court martial procedure and in the Articles of War is necessary so that each and every man shall know what are his rights and what are the daily rules that he shall follow. A large portion of the errors committed by new recruits are the result of ignorance rather than evil intent and this latter instruction is one of the earliest that should be given so that all may be forewarned.

To detail all of the instruction that becomes necessary in the course of training that is taken by the individual hospital corps man would take more time than is justified in a brief paper of this kind. It is the hope of the writer that the discussion will amplify these few remarks that are made to apply to what my predecessor has had to say regarding the duties that shall fall to the lot of those of you who shall see field service in the present war.

In treating the subject of camp sanitation, two types of camp must be considered: First, the semipermanent camp and, second, the bivouac or true field camp, such as is made while on the march and in the presence of the enemy. The Medical Corps officer is more of a sanitarian than a surgeon in so far as his field service is concerned and the recent border experience when compared with the experienc of 1898 will

show how important th consideration of sanitation in the camp really is.

The rules of camp sanitation are those of common sense modified by regulations that force the man who is lacking in common sense to the acceptance of a routine that, if carried out, insures safety. This paper will endeavor to briefly outline the rules of the War Department as regards handling the camp problems.

Water Supply—In the semipermanent camp, the water supply is usually piped to the camps and instructions are circulated as to its condition and as to what additional purification may be necessary. Filters of the Darnel type are furnished, one to each company, so that filtration may be carried out if deemed necessary. This filter is of the cloth type and is effective against nearly all types of pathogenic bacteria, is also portable, easily cleaned and simple in machanism.

On the march, water is procured when possible from sources of pure supply, but if water of questionable purity is to be used, the chlorination method of stelirazation is used. Bags known as Lister bags are furnished for this purpose, these bags being collapsible and made of heavy canvas and have a capacity of about thirty gallons. Sealed ampoules of chloride of lime, one and one-half grams, are carried with each company kitchen and the contents of one ampoule is sufficient to chlorinate the contents of one Lister bag.

By these routine measures, the water supply can be vouched for at all times and water borne gastro intestinal diseases and fevers successfully guarded against.

Disposal of Garbage—The accepted method of garbage disposal is by incineration. In the semipermanent camp, each company kitchen has in its front yard an incinerator of the open pan type that is worth its weight in gold, but is a constant source of annoyance to the sanitary officer of the camp. Trying to enforce absolute cleanliness about this incinerator is the hardest task that those in charge of sanitation have to undertake, with the possible exception of the fly problem. This incinerator is three feet wide and six feet long and the pan is placed upon walled sides about two and one-half

feet high. It is made of brick and the floor is paved with the same material and one end is walled up; this makes a three-sided brick box that sits upon a brick floor. The roof of the incerator is composed of a pan four feet long and a funnel stove and stove pipe to carry off the smoke of the fire. The pan portion of the roof is six inches deep and in it is boiled the kitchen liquid refuse and the dish water to their final disposal by the evaporation route. Into the fire is thrown all solid refuse from kitchen and mess dishes, and the process of direct incineration does the rest. All cans and tins are burned out and, after being perforated so that they will not hold water, they are hauled away to be dumped in the camp dumping ground or to be buried. The incinerator fuel is wood, helped out by the use of crude oil to help combustion.

On the march the fire pit system is used to dispose of solid garbage. A pit one to two feet deep is dug, sloping gradually to the windward so as to give give good draught, and in this pit a fire is kept burning upon which all kitchen and mess refuse of solid character is thrown. When camp is moved, this pit is partly filled with the empty, incinerated and perforated cans and is filled with earth. All liquid refuse is poured upon the ground in a place removed from camp and so situated that the sun can reach the spot at all times. On the march there is little liquid refuse, as the dry cleaning of dishes is usually practiced and the paper and straw burned. Water is usually at a premium.

Kitchen Sanitation.—The rules for kitchen sanitation are essentially two: Cleanliness and protection of food from flies. The former is observed only by constant cleaning of the kitchen and of the cooking utensils, and to make sure that this is being done, daily inspection by the sanitary officer is necessary. This duty falls upon the mess officer in line troops and his work is subject to the criticism of the sanitary inspector of the camp. The protection against flies is assured by the use of wire screening in semipermanent camps and by careful covering of food while on the march.

Human Excreta.—In semipermanent camps, the covered latrine is used for the disposal of human feces and urine. This latrine is a pit that is sunk in the ground and is usually two feet

wide, sufficiently deep to reach a porous substratum of earth and long enough to supply ample seat room. If it is to be used by a company of one hundred men the length must be sufficient to provide ten seats, allowing about two and one-half feet per seat. By widening the latrine to four feet the seats may be placed back to back, thus economizing space. A consideration of how long the camp is to remain in one place is the guide as to how deep to dig the original pit. The cover of the latrine is made of wood and is fly proof, as the drop seat covers are so made as to fall into place over the individual openings when the hole is not in use. The latrine is carefully policed daily and is also burnt out daily with straw and crude oil. The latrine is roofed and walled or enclosed by tentage.

During the night a galvanized iron can is placed in the center of the company street at a point most convenient to all of the tents and for the collection of urine. At reveille this can is emptied into the latrine and the interior of the container is burned out with straw and crude oil.

On the march a straddle latrine is constructed immediately when camp is made. This trench is made sufficiently long to accommodate the number of men in the company, and is about one foot wide and one and one-half feet deep. The earth that is excavated when the trench is dug remains in a convenient pile near the trench. After defecation, each man is required to cover up his excreta with earth. This latrine is screened off with canvas, or is covered by tentage. In wooded sections, shrubbery may be used as a screen. Upon breaking camp, the latrine is filled and the earth is carefully banked to prevent washing during subsequent rains.

Picket Line Refuse.—In semipermanent camps the picket line is cleaned daily and all of the manure is hauled to the camp dumping ground, where it is windrowel in long mounds and is burned. When the ground becomes saturated with urine, and the flies are consequently attracted to the picket line, the animals are removed and the wet ground is covered with straw upon which is sprinkled crude oil and is burned off.

On the march the picket line is burned off in the same manner, and all manure is windrowed, covered with straw or hay and burned. In leaving a camp site, it must be remembered

that the company following you may have to occupy the same site and that the men may have to pitch shelter tents where your picket line has been and you should clean up accordingly before leaving.

Drainage.—Surface water in semipermanent camps is carried off by ditching. In selecting a camp site the natural terrain should be considered, as the head of the camp should be up the slope and the rear should, as far as possible, drain the natural waterways or to lower levels. The ditches should be of the proper slope to carry the water off as rapidly as the rain shall precipitate it.

Bath water from field shower baths should be ditched off when possible. A perfectly level terrain, such as prevails in and around the camp site that the Louisiana Field Hospital recently occupied at Brownsville, may necessitate the construction of a sink hole to dispose of this waste water. The geological formation of the land must be considered in making these sink holes. At Brownsville there is a surface stratum of loam to a depth of five feet and then an indefinite stratum of sand. The sink hole of the before-mentioned organization was constructed under the writer's supervision and was six by six feet, lateral dimensions, and was thirteen and one-half feet deep. Another point to bear in mind in making these sink holes is the nearness of the latrine. If the latrine is near the sink hole, this latter hole must not be deeper than the latrine, for if so the water that accumulates in the sink will be polluted by the human excreta and will be a consequent source of foul odors. The sink hole is roofed and rendered mosquito-proof to a large extent, but bi-weekly doses of oil are necessary to prevent breeding of larvæ.

All ponds and waterways near camp should be oiled frequently so as to do away with the breeding places of mosquitoes and as an added precaution, the mosquito bar regulation should be rigidly enforced in all vicinities which the mosquito inhabits.

Sanitation of Quarters.—Here again the rule is absolute cleanliness. In each tent the occupants are required to maintain cleanly conditions, and this is enforced only by daily routine inspections with penalization of all who do not conform to the regulations. This cleanliness also pertains to the area about the

tents and to the parade grounds. The custom is to try, in so far as is possible, to keep the camp as clean as an old maid housekeeper wishes her parlor to be.

Time does not permit of an analysis of the personal hygiene of the troops, but it is the hope of the writer that the discussion of this and the other papers read at this time will bring out the accepted and highly successful measures that are used to make our army a clean one.

These duties of instruction that have been briefly outlined all fall to the lot of the Medical Corps officer in the field, and let us hope that you may have been enlightened in some small way as to what will be expected of you when you take the field to educate the troops along lines of health and usefulness.

THE ORGANIZATION OF A BASE HOSPITAL.*

By HERMANN B. GESSNER, M. D., New Orleans.

I shall begin my presentation of the organization of a base hospital by quotation from the Manual for the Medical Department, U. S. Army, 1916:

> 757—Base Hospitals are Medical Department units of the line of communications under the supervision of the surgeon, base group. They will occupy buildings, if suitable ones are available.
>
> 758—The base hospitals will be numbered from 1 upward in a single consecutive series for the entire military establishment. The will be further distinguished by adding the designation of the field army to which they belong, as "Base Hospital No. 9, 3rd Field Army."
>
> 759—These hospitals should be established at the base and, when necessary, in accessible situations along the line of communications. The number to be assigned to each line of communications when first established is determined on the basis of the number of troops to be served and the percentage of sick and

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wounded which may reasonably be anticipated in the particular campaign in question. (See par. 152).*

(a) New base hospitals may be established when those already in operation have become too far separated from the army, when they are needed to supplement the services of more advanced hospitals, or when new sites will be more convenient to handle wounded.

(b) On the eve of battle it may be necessary for the surgeon, base group, to open additional base hospitals near the front or to augment the personnel and supplies of those already established there.

760—The personnel allowed a base hospital, as given in Tables of Organization, are ordinarily assigned as follows: 20 medical officers, 1 colonel (commanding), 1 major (operating surgeon), 18 captains and lieutenants (1 adjutant, 1 quartermaster, 1 pathologist, 1 eye, ear, nose, and throat specialist, 2 assistant operating surgeons, 12 ward surgeons); 1 dental surgeon; 8 sergeants first class (1 general supervision, 1 in charge of office, 1 in charge of quartermaster supplies and records, 1 in charge of kitchen and mess, 1 in charge of detachment and detachment accounts, 1 in charge of patients' clothing and effects, 1 in charge of medical property and records, 1 in charge of dispensary); 16 sergeants (1 in dispensary, 2 in storerooms, 1 in mess and kitchen, 4 in office, 2 in charge of police, 6 in charge of wards); 14 acting cooks; 115 privates first class and privates (68 ward attendants, 3 in dispensary, 5 in operating room, 1 in laboratory, 14 in kitchen and mess, 6 in storeroom, 4 orderlies, 5 in office, 4 outside police, 1 assistant to dentist, 4 supernumeraties); 46 nurses, female (1 chief nurse, 1 assistant to chief nurse, 41 in wards, 2 in operating room, 1 dietist).

761—So far as adaptable the regulations for general hospitals will govern the interior administration of base hospitals. (See pars. 283 to 316.)

*Par. 152. Certain general deductions may be made from experience in war, which will serve as hypotheses on which plans for the operation of the sanitary service may be based. Casualties may be estimated at 10% of the troops engaged, with the understanding that certain organizations may suffer very much heavier losses, while some may suffer less. Of the casualties, the killed may be estimated at 20%, seriously wounded, 8%; less seriously wounded but requiring transportation, 32%; the wounded able to walk to dressing stations or field hospitals, 40%. The demand for bed capacity in the rear of the zone of the advance will depend upon the frequency and severity of the engagements. There have been instances where after several months' campaigning it has reached 40% of the strength of the Army maintained at the front. For field problems it should be assumed that a bed capacity equivalent to 10% of the total force in the Zone of advance is immediateiy available when troops take the field, and that facilities have been provided for promptly supplementing that number should the occasion require.

762—The base hospitals are designed to receive patients from the field and evacuation hospitals, as well as cases originating on the line of communications, and to give them definitive treatment. They should be well equipped for such treatment and there should be sent to the home territory only pationts who require special treatment or whose condition is such that they may be regarded as either permanently disabled or likely not to recover within a reasonable time. If, however, the number of new cases from the front is taxing the base hospitals beyond their capacity or the facilities thereof are inadequate from any cause to meet the demands upon them more extensive evacuation of patients must be effected. On the eve of battle the base hospitals near the front should be cleared as far as possible to make room for new patients.

763—Unless otherwise provided the personnel, supplies, and equipment for the evacuation of patients from advanced base hospitals to the rear will come from the hospitals receiving them.

764—The commanding officer of the hospital will indicate under "Remarks" in his daily report made on Form 83, the number of patients who require transfer so that arrangements may be made accordingly. He should himself supervise the selection of patients for further transfer in order to keep down to the lowest possible figure the number of men lost to the Army.

765—Base hospitals ordered to close will dispose of their patients as directed by the surgeon, base group.

Field Hospitals.

699—The function of the field hospitals is to keep in touch with the combatant organizations and to provide shelter and such care and treatment as are practicable for the sick and wounded of the division who are brought in by the ambulance companies until the sanitary service of the line of communications takes charge of them. A field hospital can meet these requirements only when it is relieved so promptly by the sanitary units in the rear that its mobility is not interfered with. Prompt evacuation of the sick and wounded is necessary also to secure for them the facilities for treatment and the comforts which are available on the line of communications.

795—The primary function of the evacuation hospital is to replace field hospitals so that the latter may move

with their divisions, or to take over their patients with the same object in view. So far as it would not interfere with this function the evacuation hospital may be used for ordinary purposes on the line of communications.

It may be of interest to outline my observation of the preparation of a base hospital during the summer of 1916. From Fort Sam Houston, San Antonio, Texas, I went to Camp Stephen Little, Nogales, Arizona, with Major (now Lt. Col.) Geo. A. Skinner, who brought with him specifications for the erection of buildings. The unit ward to be built was of frame, 100 by 20 feet, with an 8 foot porch all around, and a ventilating space at the top called a louvre. The site was furnished by the city at a nominal rental; water, sewer, electric, and in the course of time, gas service were provided. The materials were provided by the quartermaster in charge; labor was employed by the day. The buildings put up in order were: A surgical ward, medical ward, a kitchen and mess building, a building for toilets and shower baths to accommodate ambulant patients, a laboratory building, 2 buildings for female nurses. Forty-five days after we arrived in camp we were able to do major surgical work in our own operating room, equipment and supplies had been received by this time, an X-ray outfit included. Pending the completion of these preparations we did major work at St. Joseph's Hospital, conducted by the Sisters of Mercy.

In conclusion let me say that my experience was in every way delightful. The only unpleasant feature of my campaign experience was the uncertainty as to its duration.

PRESIDENT'S ADDRESS.*

By WILLIAM H. SEEMANN, M. D., New Orleans.

As one of the pleasant privileges that come to the outgoing President and one of the penalties inflicted on the Society, is the custom of the presidential address. As a rule, it must be admitted, doctors are fairly good talkers, but not generally of the forensic type; this gentle impeachment is admitted on the speaker's part.

It has been usual for the past Presidents, following the human custom, to talk about something not in their line; I shall claim the right to enjoy the same privilege in speaking of the relation of Medicine to war.

I remember the great surgeon and literateur, Nicholas Senn, who among the many and varied subjects which his versatile pen illuminated, writing, in the *Journal of the A. M. A.*, an article on "Aesculapius in War." His theme was selected and his ideas stimulated by the martial condition existing at the time—it was the time of the Spanish-American War; so now, every patriotic American has felt the tingling of loyalty in his veins and has introspectively asked himself what he might do to help his nation in her need.

The physician, perhaps above all other professional men, excepting possibly those of the ministry, is the truest disciple of the great Physician, the most devoted follower of the Prince of Peace; his philosophy, however, is bound to be activated by his education and he must agree with the great Athenian political philosopher, Plato, that "All states are in perpetual war with all—for that which we call peace is no more than merely a name, whil'st, in reality, Nature has set all communities in an unproclaimed but everlasting war against each other."

The primal instinct of self-preservation and the immutable law of the "survival of the fittest" are both doctrines that have been evolved and sustained by these facts; and the doctor reasoning from analogy, on acount of the familiar and

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continuous cellular conflict in disease which he, as it were, as a medical military observer, has to see, is more able and more ready to accept the philosophy of Socrates' pupil.

From the standpoint of eugenics, the study of the effect of war on a nation has always been a subject of great interest to doctors, also the effect of war upon the development of the science and art of medicine.

Even the gentle and temperamental Ruskin was, from a pacificist view, extreme enough to say that "All the pure and noble arts of peace are founded on war.....We talk of peace and learning, of peace and civilization; but I find that these are not the words that the muse of history has coupled together.....I found in brief that all great nations learned their truth of work and strength of thought in war;..... trained by war and betrayed by peace; in a word, they were born in war and expired in peace."

Of course in many parts of the paragraphs I have quoted, even Ruskin later admitted there was great room to question the almost extreme views, but when we realize how near betrayal this great and noble nation of ours came by peace, we can well ponder and ask ourselves the question: Whether there is not truth in Ruskin's words, especially when we know from the context that he meant to tell us that in time of great emergencies, especially of a national kind, most men are wont to put aside selfishness and to awaken to a recognition of the higher and nobler parts which divine Providence has cast them for.

As a great democracy like ours has been christened a melting pot, so might I compare war to the fiery ladle that dips out of the mass the individual elements for cupellation to learn whether they have become amalgamated with the whole or to find a lot of worthless foreign substance.

In this great analytic movement, the doctor does not escape the test and be it said to his glory that history has never recorded him as wishing to escape. While the epic of artillery evolvement, the wonder of air plane development and the horror of submersible attack have all occupied most of our minds, the prosaic and even at times not unromantic development of the doctor in the science of war has also always

deserved and sometimes gotten the attention and occasionally the plaudits of mankind.

It is a far cry from Ambroise Paré to Alexis Carrel, and all must recognize it; yet Paré, even as the barber surgeon devotee of his patron, Colonel Montejan, subsisting on an occasional donation, varying from a crown from a common soldier to three hundred crowns from the king, typified the answer to the call of humanity which every true physician must make, when the test comes; and some of our modern stellar performers might read a sermon in Paré's modest record of his own achievements when speaking of a bad surgical case which under his care had recovered, he said "I dressed him and God healed him"—and no one who has followed in the "reel" of history this great promoter of the use of the ligature in surgery in his humble "Apologia" from Turin to Rouen can but acclaim his unselfish and continuously painstaking devotion to duty.

I will not take up your time presenting a digest of the literature which describes the transformation which has occurred in military medicine since the days of Paré's "Unguentum Comitissae" to our present day when we see the unattached unresponsible individual barber surgeon of Paré's day supplanted by a highly organized and trained body of efficient workers, ready and responsible.

The Medical Departments of an army and navy today are as systematically arranged and as methodically run as any other branches of public service or any other line of endeavor.

In order to further increase the efficiency and to meet the needs of these departments in times of need, there has come into existence a council on National Defense, affiliated with the American Red Cross, which has for its purpose the arranging and cataloging of medical men, as regard to their qualifications in order that their services may be more quickly and efficiently made use of in time of national emergency such as exists today.

The peerless guardian of our national destinies, President Wilson, said in his speech to Congress that: "Neutrality is no longer feasible or desirable where the peace of the world is involved and the freedom of its peoples, and the menace

to that peace and freedom lies in the existence of autocratic governments backed by organized force, which is controlled wholly by their will, not by the will of their people. We have seen the last of neutrality in such circumstances."

And behind these sentiments a patient nation that has watched with breathless anxiety and uncertainty the trials and struggles of this greatest of Americans to avert war and to preserve peace, stands no longer anxious, no longer uncertain but with the certainty of a peerless leader and the consciousness of a just cause, they are waiting the word to march on to victory.

Our past in the achievement of the noble aims of our country in its unselfish sacrifice to preserve liberty must be determined by circumstances. There will be lots of work afield and lots of work at home and we must all realize that although we cannot all be majors or even captains in uniform, we can all be marshals of our own consciences and as each man is indubitably a positive influence for good or evil, we can at least do no less than help mold the opinions of our communities to a righteous sense of their obligations. Our services may be needed soon—who knows? or may not be needed at all—but remember that he also serves who stands and waits, and he stands and waits best who is best prepared.

So it behooves us to look around and to investigate the needs of the situation as it affects us and not to wait until we are searched for.

There has been some serious effort made to list the men of medicine in this state according to their activities and in the organization of this effort it has been necessary that certain leaders be appointed; this does not mean, however, the activities of other leaders must be curtailed or that other organizations with properly co-ordinated activities will not serve a good purpose and be as heartily welcomed. Every man and woman has a duty and every man and woman is expected to do it.

In our entry into the maelstrom of this most terrible of wars, the die has been cast and there is no recall nor would

we wish for one; on the contrary, we must each one work and give to the extent of our strength and our fortune that our country may be triumphant and in the language of Carlyle she may "achieve the final undisputed prostration of force under thought, of animal courage under spiritual."

PERTINENT EVIDENCE RELATIVE TO MODERN VIEWS ON TUBERCULOSIS.*

By WALLACE J. DUREL, M. D., New Orleans.

It is proposed to discuss in this paper, the salient modern factors pertaining to the Infectiousness, Prevention, Diagnosis, Treatment, Management and Care of the tuberculous.

It is a well recognized fact today that tuberculosis is not the result of only the direct action of the T. B. upon the tissues but, that it is equally dependent upon the qualification of the blood and tissue cells, to resist and limit the invading tubercle bacilli, in numbers and in their virulency.

Viewing the above from a practical point of view, we realize the fact that the danger of infection by the T. B., in ordinary public, office and home life, is not such a menace to the average individual; and that attempts to prevent infection by sanitary milk and anti-spitting laws, are not alone sufficient to eradicate the dreadful White Plague.

Today we must all understand, that to prevent infection, it is indispensable for anyone to follow a proper "Mode of Living," i. e., proper exercise, with a sufficient amount of rest; a regular and well balanced dietary; an abundance of ventilation and open-air life; dust proof apartments; proper clothing, etc.

This is far more important than to be in constant fear of inhaling the "pestiferous" tubercle bacilli.

Our health rules, regulating the disposal of sputum and other excreta, are very good; but, certain regulations in the care and management of our homes, factories, offices, and such places where man lives a part or the whole of his time, are more important.

*Read at the 38th Annual Meeting Louisiana State Medical Society, Alexandria, La., April 17, 18 and 19, 1917. [Received for Publication May 18, 1917.—**Eds.**]

This can best be done and carried out by the medical profession, assisted by Public Welfare Societies, Boards of Health, and the "good will" of the public.

The startling evidence that tuberculosis, in the great majority of cases, is a disease contracted during childhood, suggests the importance of a close examination of school children, for the detection of any tuberculosis or other defects, in the bronchial glands or lungs; with also a thorough "inquiry" into the "home" environment of all children.

The proper construction, sanitation, and ventilation of school-rooms and homes of our young generation, with the establishment of open-air schools and farms the "Preventorium" for those found to be defective, will be productive of better returns than anything we can do at present.

Those in whom we have not been able to prevent infection, it is essentially important to recognize the existence, as well as the virulency of the infection—before it has progressed beyond medical aid.

Here again, the doctor is responsible, in a great many cases, for the advanced stages of the disease; not necessarily by his inability to diagnose the disease in its incipiency; but by his utter indifference in the care and welfare of the tuberculous.

Our medical schools are partly responsible for this indifference of the medical profession, as seen in a recent resolution passed by the National Society for the Study and Prevention of Tuberculosis, whereby it was shown by our most reputable teachers in medicine that, tuberculosis was a branch of medicine very meagrely taught, thus depriving the medical student from becoming familiar with the most modern views on tuberculosis.

Let us hope that our Southern medical colleges will follow the example of other medical schools, thereby giving the medical student all the opportunities and facilities to perfect himself in this branch of medicine.

In order to recognize "active" pulmonary tuberculosis in its incipiency, it is just as essential to acquire a thorough family, personal, and clinical history, as to determine the

physical findings in the lungs, of the T. B. in the sputum; or the tuberculin reaction.

In the family history, we should particularly inquire whether there has been a direct and constant contact and exposure to an "Open" case of tuberculosis. In the personal history, it is very important to determine the "Mode of Living and the environment of the patient, during childhood and later in life; and also, the previous occurrence of any disease, especially measles, influenza, pleurisy, adenitis, etc."

In the Clinical History, the following cardinal clinical symptoms of incipiency are, at present, the only means of determining the "activity" of the disease:

1st. Temperature record from 7 a. m. to 9 p. m., every two hours, shows a morning temperature of 96.8 to 98.0, with an afternoon rise of 99.2 to 100 F.

2nd. Instability and acceleration of the pulse.

3rd. Disturbed digestion.

4th. Loss of weight.

5th. A feeling of lassitude and depression, and chilly sensation.

6th. Cough—generally of a hacking type, and more in the morning.

7th. Lowered blood pressure.

8th. A history of hemoptysis. (This is not always an evidence of tuberculosis). None of the above symptoms are *PATHOGNOMONIC* of tuberculosis.

In "latent" tuberculosis of the bronchial glands and lungs the above symptoms are not present, though lesions can be detected by physical examination of the chest.

It is essentially important, in *MAKING* the diagnosis of tuberculosis—to determine whether the patient is suffering from a simple tuberculous infection, or a "latent" tuberculosis; or an "active" tuberculosis—(Tuberculous disease).

In determining the lung findings in tuberculosis, one must specially note any changes in the expansion of the upper and lower lobes; and also any atrophy and rigidity in the muscles of the neck and upper chest walls. Slight dullness and tympany can be usually found by percussing both lungs after inspiration, and then after expiration.

The site of predilection for incipient lesions, is in the inner third of a triangle bounded by the vertebral spines, the Scapula spine, and the trapezius muscle. Lesions in the anterior surface of the chest are of graver prognosis, and seldom seen in incipiency.

On auscultation, it is always well to remember that we must be suspicious of any changes in the clear vesicular respiration.

The prolonged expiration, and the harsh, rough, granular, intermittent or wavy breathing; the localized wheezing, d'Espine's sign, and fine moist rales are not pathognomonic of tuberculosis.

Tubercle bacilli in the sputum are found in only 40% of incipient cases of tuberculosis. Therefore, in approximately 60% of incipient cases, the only pathognomonic evidence of *"OPEN"* tuberculosis is not present.

In cases of *"CLOSED"* tuberculosis the presence of a tuberculous infection or of a "latent" or "active" tuberculosis, can only be determined by the administration of the tuberculin tests—the skin tests denoting the tuberculous infection, and the sub-cutaneous test localizing the foci of infection.

The complement fixation test still lacks affirmative value as a positive evidence of "active" tuberculosis.

The X-rays only give a topographical distribution of the lesions.

The correlation of the lung findings with the clinical symptoms is not a fixed rule in "active" tuberculosis, for many cases with very few lung findings, will present pronounced and severe clinical symptoms, with high temperature, rapid loss of weight, chills and night sweats, pronounced cough, etc. Other cases will show extensive lung lesions, but with normal or slight rise in the temperature (99 to 100. 6 F.), and no stomach disturbance, loss of weight, etc.

In the latter cases, we are more apt to find the early appearance of tubercle bacilli in the sputum.

Advanced cases of tuberculosis with free and abundant sputum always show tubercle bacilli in the sputum.

A persistent high lymphocytic count, is a good prognostic feature in all stages of tuberculosis; and a high neutrophilic

Index, with a *LOW* lymphocytic count, is persistent, denote a bad prognosis.

Cardiac insufficiency and bronchiectasis; pneumococcic and coccic, influenza and colon bacillus infections, etc., when presenting *LUNG* findings and clinical symptoms stimulating tuberculosis, can best be differentiated from tuberculosis, by a careful study of the clinical symptoms and skiagraphs, with repeated sputum examinations and tuberculin tests.

Repeated tuberculin tests and sputum examinations when "negative" practically exclude the tuberculous nature of the infection, except in the presence of another acute infection, or acute pneumonic phthises, or miliary tuberculosis. A close study of the history and clinical findings, in such cases, is essentially important.

In the treatment of tuberculosis, let it be known and understood, that the results reported by Institutions and Authorities in the East, North and South (at lower altitudes) prove conclusively, that high altitude and ozone air, play but a very small part (if any) in the cure of tuberculosis. Wherever a patient may take the "cure" he is obliged to follow the Basis of Hygienic Treatment, i. e., *REST, DIET* and *OPEN-AIR LIFE.* Absolute rest, until all symptoms of "activity" of the disease have disappeared for a month or so. Sitting up, walking, and graded exercises, with periods of rest, are only permitted when no symptoms indicating "activity" can be noticed.

The strict adherence to the open-air life (sleeping porch or tent) with an abundance of fresh and dustless air, is not only essential during the "active" stage of the disease, but should be continued for a few years after the disease has been eradicated.

The taking of a well balanced mixed diet, without excesses in overfeeding, is primarily important in the cure of tuberculosis.

The milk and egg diet cannot, and is not intended to replace a mixed diet, and should not be abused of, as it has been done in the past.

In the auxiliary treatment, the *TUBERCULINS* have proven, in the hands of many, an indispensable weapon in

bridging over to recovery the lagging and slowly improving case, that failed to respond to the basic treatment. The *TUBERCULINS,* however, must be carefully and intelligently administered. The essayist prefers giving the *TUBERCULINS* guided by the *NEUTHROPHYLIC INDEX.*

Creosote (beechwood), iodides, tinct. iodin (old formula) have proven of great benefit in the treatment of far advanced cases, in the tuberculosis wards of the Charity Hospital.

Artificial pneumothorax, in proper cases, has proven of some advantage, especially in far-advanced cavity cases. The correction of any functional disturbance in the stomach and blood especially, is a factor that most of us overlook in the treatment of tuberculosis.

Cough mixtures should be seldom or never prescribed. Hyperemia methods (poultices) and cold applications have their place in the treatment of pulmonory congestions and abscess formation, in tuberculosis.

In order to effectively apply these methods of prevention and treatment, it is imperative that we should have the following:

1st. The examination of all school children for the presence of a tuberculous infection; and the establishment of open-air schools and "farms or Preventoria" for defective children. A close examination of the food supply and milk.

2nd. Regulations tending towards proper sanitation and ventilation of offices, factories, public places, and homes of all classes in the community.

3rd. More rigid enforcement of anti-spitting laws, with care given to the cleaning up and sun-light disinfection of dwellings occupied by tuberculosis patients. Fumigation to be only secondary to the latter.

4th. Displacing the "Indifference" of the medical profession, in the care of the tuberculous, by giving more time and facilities for the teaching of this branch of medicine in our medical schools. Also more interest displayed by the medical profession in educating the public relative to a proper "Mode of Living."

5th. The organizing of more dispensaries and tubercul-

osis clinics, with competent staffs of well trained and interested visiting nurses; Sanatoria for *ONLY* the "active" (not latent) incipient and moderately advanced cases, who cannot receive the proper care and treatment at *"HOME"*. Hospitals for far-advanced cases, requiring constant nursing and medical attention and who are bed-ridden.

The magnificent gift of Hon. Judge Breaux—"The Breaux Annex" to the Charity Hospital, is a living tribute, demonstrating the great benefit derived from such institutions—both as a preventive and hospital relief measure.

6th. The establishment of "Farms" or "Camps" for those who have been treated in sanatoria and hospitals, and do not require any more aggressive treatment or medical care, but, some supervision in their "Mode of Living;" and who are absolutely destitute and homeless, and thus unable to carry out at home, the necessary anti-tuberculous "Mode of Living" required to bridge them over from the quiescent and arrested stages to complete recovery.

Dr. Sloan's "Farm-Colony" near Baltimore, has proven the efficiency and necessity for such institutions.

In our experience in the tuberculous department of the Charity Hospital, the disposal and evacuation of these cases becoming quiescent, or improved, and who are destitute and homeless, has been a most trying and serious problem.

DISCUSSION ON THE PAPER OF DR. DUREL.

Dr. George J. Dempsey, New Orleans: I do not think it would be right for a paper of this importance to go by without some discussion. I congratulate Dr. Durel on the simple manner in which he has presented this subject. He has made no attempt to go into the mysteries of diagnosis, the cures and reliefs, etc.

In attempting to open the discussion on such a subject, the five minutes allotted to one is not enough. However, I will try to discuss certain phases of the subject.

This work, from an educational standpoint, which has been carried out in the city of New Orleans and throughout the state by the Louisiana Anti-Tuberculosis League, is well known to the men of the society. As Dr. Durel has well

said, educational methods should be established and instituted. We have tried to do this and have met with some results. We should have institutions also for the advanced cases of tuberculosis, for there is no way of getting rid of the disease until we get hold of the advanced cases and get them under control.

In the city of New Orleans with a population of 375,000, and about one-third of them negroes, we have a large problem to contend with. We lose about a thousand people from tuberculosis annually, and 50 per cent of them are negroes. Just imagine what we have to contend with. These negroes go into our kitchens, they nurse our children and take care of our households. Sometimes they occupy the bedrooms or sleeping quarters when the families are away; the consequence is we are more exposed than ordinarily. We have no provisions at all for negroes with the exception of the Charity Hospital. We expect to provide for about 112 patients in one of our hospitals. As I have said, with a population the size of New Orleans, and considering that we lose on an average of a thousand a year, you can imagine how much chance we will have to control tuberculosis. I venture to say, we have five thousand cases of tuberculosis in the city of New Orleans in the different stages of the disease. Therefore, those who are interested in this work should combine their efforts and try to institute teaching throughout the country parishes, and then at the end of ten years we may be able to get sufficient sanitoria and hospitals to do something from the tuberculosis standpoint.

Dr. George S. Bel, New Orleans: In listening to Dr. Durel's paper, I find that he has covered the subject so thoroughly and nicely that I can only concur in nearly everything he has said from a clinical standpoint.

Dr. Durel has done more for the education of the public and the medical profession in our community than any other one individual I know of. He is a pioneer specialist in tuberculoss in our section, and there is no question about the doctor's ablity to bring this subpect before such an intelligent audience. I wish to compliment him on the manner in which he has handled the subject.

There are a few points I want to bring out, but I can hardly do so considering the vast importance of the subject and the short time allotted for discussion.

The doctor mentioned that the X-ray was good for topographical location. Any X-ray that can locate anything is a mighty valuable part of armamentarium and the use of it is absolutely essential for progress. In the use of the X-ray it is very necessary to have an expert interpreter, and when you have such an interpreter, in my clinical experience the findings correspond with the physical findings. The X-ray cannot be successfully used by everybody, but in the hands of an expert radiologist who can interpret the pathologic findings, just as our colleague and friend, Dr. Durel, has found in his ability to diagnose these cases, which we all grant, the X-ray is very valuable indeed. I want to say in justice to the X-ray, that I believe in it, and in my own individual practice it has corroborated the physical findings, and the expert radiologist is not only capable of locating certain pathologic conditions, but he is able to diagnose lesions primarily in their incipiency.

For instance, I have had a radiologist tell me that this or that individual had calcified tubercle, and the individual died of pneumonia later on. I remember a case that died in the hospital of typhoid fever, and it proved to be one of calcified tubercle. Now, if the radiologist is capable of demonstrating that before death or during the early part of the disease, I should think it is highly commendable, and I would advise you gentlemen to employ the X-ray. It is a valuable adjunct to our armamentarium in diagnosis, and it gives me great pleasure to say that I use it, as a rule, in all cases.

Early tuberculosis in my experience is not an unilateral disease. As a rule, you will find it on both sides in its incipiency, beginning at the hilum primarily of the bronchial glands, spreading to the hilum, more on the right side than on the left, but it is a rare occurrence to find tuberculosis in its incipiency only in one lung. Again, it is very rare that it is found in my clinical experience at the apex, or it is rare that it attacks the apex. It is usually where the doctor says, along the hilum, extending from the second to the sixth rib.

Bronchiectasis is an unusually rare condition so far as the physical findings during life and at the dead house are concerned. We find that bronchiectasis is a condition that is beautifully described in our textbooks, but we know that around the bronchial tubes there are cavities and slight dilations of the bronchi. If you go into the post-mortem room and witness an autopsy performed by a competent pathologist, you will find it is a rare occurrence to find bronchiectasis. Dr. Durel is correct in saying that bronchiectasis does exist, and I agree with him in that statement, but it is a rare occurrence as an individual disease, and I think any good pathologist will bear that statement out.

Dr. William H. Harris, New Orleans: In reference to Dr. Bel's statement as regards pathologic lesions found at the autopsy table, I would like to say that it is a very common occurrence in routine post-mortem work to find the lesions of tuberculosis often extinct at the lymph nodes at the hilum of both lungs. There comes up a good deal of discussion as regards the enlargement of the glands we find there. We know that the lungs drain into them a good deal, and the bronchial lymph nodes at the hilum of the lung are practically always mitotic. Microscopic examination of these same glands quite frequently will show evidences of tuberculosis at the base. We feel that this structure is often attacked and not infrequently without any injury to the pulmonary tissue itself. Of course, we seldom hold post-mortem examinations upon cases that have died of incipient tuberculosis in the active stage. It is not often we find them dying of other conditions where we find these lesions present. I should say usually that in post-mortem work both lungs are bound to be involved, generally one lung more so than the opposite lung, but occasionally we do find instances in which one lung is involved; and as regards the matter of bronchiectasis there is a true dilation of the bronchial tube which is not a frequent finding at the post-mortem table. We have to differentiate between true bronchiectasis and pseudobronchiectasis the same as we have to differentiate between a true aneurysm and a pseudoaneurysm or dilatation of the aorta. We may have a slight fusiform condition of the bronchial

tubes, and it may be a question whether or not it is a true bronchiectasis. There is one other feature I would like to lay stress on, namely, it has been our experience to see a good many cases of blastomycosis of the lung post-mortem. I have seen quite a few such cases, and we cannot there make a diagnosis by looking at the lung with the naked eye whether it is blastomycosis or tuberculosis. There is very little chance on the outside with stethoscope and fingers to make a diagnosis of blastomycosis from an examination. I think it is timely to state that it is a good thing to be very careful in cases in which we do not find advanced tuberculosis or tubercle bacilli after repeated examinations, to be on the watch for this particular disease which seems to be more prevalent than we realize, namely, blastomycosis of the lung.

Dr. Adolph Henriques, New Orleans: I came in a little bit late and did not hear all of Dr. Durel's paper. However, I would like to discuss that part of it which I did hear.

To my mind a solution of the tuberculosis problem lies in the early diagnosis, and the early diagnosis of pulmonary tuberculosis is not a simple matter. I have had the opportunity to examine cases of scores of physicians, and it has been my experience that over 90 per cent of physicians cannot recognize early tuberculosis by the ordinary methods. Early tuberculosis of the lungs requires an expert ear to recognize it. If we wait until the disease has advanced, we do not need the expert; the people next door can recognize it. That is not the time we should recognize it. In many instances we have to diagnose it before it has advanced to the apex.

I have examined over 700 lung cases with the X-ray and I have found that in the majority of these cases the disease does not begin at the apex of the lung. When we find disease in the apex of the lung, as a rule, the disease is no longer incipient. Dr. Bel has brought out some good points in that respect, that the disease begins in the majority of cases at the hilum of the lung and seems to extend upwards to the apex or towards it, but not necessarily reaching it. The disease is found frequently in both sides of the lung. We have made these observations independently of one an-

other, and it appears we have coincided in our ultimate conclusions. We find in many of these cases the disease is more posterior than anterior. If we can recognize the disease early enough it is then a question, I believe, of simply months for patients to get well instead of years and, perhaps, never.

Dr. I. I. Lemann, New Orleans: I would like to emphasize one statement of Dr. Durel's, namely, the statement relative to the danger of phthisiophobia. It is a point with which I am in hearty sympathy with him and have been for many years. It seems to me, we are in very great danger on the one hand of encouraging interns and nurses to neglect tuberculous patients, and on the other hand to deny the tuberculous patients, especially those we cure or whose cases are arrested, opportunities for making a living. I have known interns, who, after being assigned to wards in which there were cases of tuberculosis that had been segregated, to make very perfunctory rounds for fear they might become infected. I have known nurses to take the same attitude towards tuberculous patients. It seems to me, we ought to stress the statement of Dr. Durel that there are two factors in connection with infection from tuberculosis, the factor of the tubercle bacillus and the factor of the human individual; and the human individual who maintains himself in good condition by proper modes of living, by proper exercise, by proper rest, by proper hours of sleep, and by proper dietary, is going to maintain himself in a condition where he is going to put up a winning fight against any invasion by the tubercle bacillus. In the second place, by adopting and by stressing the point of view of Dr. Durel, we can guarantee to tuberculous individuals the right of earning a livelihood. Once you put a stigma on the tuberculous man or woman, you will find him or her denied this and that avenue of employment. I have seen this feeling growing more and more in the professions which demand a physical examination before admission or employment, which is a menace to the opportunity of earning and maintaining a livelihood. We have seen trades and occupations which are particularly well adapted to tuberculous patients, yet practically denied them by

questions into their history and by physical examination. Let us take, for instance, letter carriers. Can any one, in a way, think of a better trade for a man whose case is thoroughly arrested than that of a letter carrier? Yet, if he undergoes a physical examination and has to have his history gone into, the chances are that if he wishes to adopt the occupation of a letter carrier he would be rejected. While I think it is well that open cases of tuberculosis should be rejected in offices and factories and places of that sort, still, on the other hand, there is a tendency to carry the restrictions too far.

I think Dr. Durel is rendering us a service by sounding this warning—the danger of driving the campaign against tuberculosis too far so as to create in the public mind a fear or dread, and we have already noticed such a great fear of pythisis that we are afraid of our own shadow and are afraid of employing anybody who has any touch of tuberculosis.

Dr. Durel (closing): After fourteen years' experience and fourteen years of watching in connection with this field of work, I find that it takes a lot of good will and encouragement because we have overcome criticism. Unfortunately, until a recent date, it was the public's impression that this work was taken up from a pecuniary point of view, and I believe the people still have that in mind. Even some of my confreres today look upon it probably as a money making scheme. I have had to overcome that feeling, and I ask you to do the same. Never mind criticism, it is the welfare of the public we are after, and we are going to be criticized in any work or movement we undertake. We should work steadily, and if we do so, we will accomplish in time what we want.

The remarks made by Dr. Dempsey and by Dr. Bel touched my heart, and I feel amply compensated for what I have done.

As far as the use of the X-ray is concerned, I employ it extensively in diagnosis. I could not in a short paper of this kind discuss the X-ray extensively as an aid to diagnosis. We all know that the X-ray is a great help in differentiating tuberculous conditions from the normal. The great problem

in diagnosis is to determine whether a given case is one of active tuberculosis or latent tuberculosis. Because a patient has a lesion in the lung or because he responds to the tuberculin test, do not ship the poor fellow away to some institution. The main point is whether he is active or latent enough to be treated or not. I assure you, we have accomplished something in the progress of tuberculosis therapy. Both lungs are generally involved. In the very incipient cases you will find tuberculosis in the bronchial glands. The primary lesions are in the bronchial glands. There is a lack of interest displayed by the profession as a whole in this work. We want you to help us. You are the ones to do the fighting; you are the ones that are going to solve the problem. Of course, our boards of health and the publication of pamphlets on the disease will help us very materially. The Anti-Tuberculosis League in Louisiana will help us, but we are the preventors. We must do the work.

As to the phthisiophobia or dread of this disease, I wish I had had a little more time to go into this in my paper. Since I have taken charge of the tuberculous ward in the Charity Hospital I have had a daily fight almost with the interns; they would not go to the ward and take the interest that they should in tuberculous patients. The nurses manifested the same attitude towards these patients. It is not a question of being afraid of the disease. I have said to the interns and nurses that in approaching or caring for these patients they should see to it that they did not infect them; that the tuberculous patients should keep a handkerchief before their mouths when they cough; that moist sputum is most infectious.

As to the matter of hospitals for advanced tuberculosis patients, I cannot lay too much emphasis on that phase of the subject. The details of these hospitals I did not go into, but I will simply say that with our Breaux Annex, where we can take advanced cases of the diseases, and with the Dibert Memorial we are making progress.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

GREETINGS.

It gives me pleasure to greet you through the pages of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL, the official organ of the Louisiana State Medical Society, selected at our last Annual Meeting at Alexandria. The policy of the JOURNAL in the past which has been very laudable and its promptness in appearing make it especially advantageous to the Society in having such a mouthpiece through which to address its members.

Arrangements have been made to furnish the JOURNAL to the present members beginning with this issue; and to the new members of the Society with the issue of the month following the reception of their dues which means, for example, that the member who submits his dues in the month of February will receive his JOURNAL beginning with the March issue which will be issued on March 1.

The furnishing of the JOURNAL to the members is a great additional expense to the Society, but not to the members, as the Society will bear the cost of subscription. It is essential for the Society to handle the subscriptions in a business like way in order to protect itself. This opportunity is taken, therefore, to remind each member of the advantages of not permitting a lapse in his membership which would affect the files of his JOURNAL. For instance, if the membership of the Society for 1917 is 1000 and on January 1, 1918, the Society will have a bone fide membership of 500, it is not to be expected of the Society to send the Journal to the other 500, whose dues have not been received in advance as required by the Society, (Chapter IX, Section 2). As there is always a fluctuation in membership from year to year to a greater or lesser extent the Society, should it continue to send the JOURNAL to those who do not continue membership,

would be expending money it would not have a right to, which would diminish the funds of the Society and thereby effect the value of membership to those who do not wish to allow the advantages of their membership in the State Society, including Medical Defense, to lapse.

The space allotted to the Society will also be used to inform our members of what our other members are doing. Each Parish and District Society is invited to send to the Secretary-Treasurer whatever information it believes may be of interest to the Society. Also any personal information from members will be gladly received and given due consideration whenever possible.

Our Society is now offering as much as any other state organization and a great deal more than the vast majority of them, and our aim is to make our membership so valuable that the eligible physicians in the State will be made to feel what they are deprived of to such an extent as to make it impossible for them to stay without.

If every member will consider himself a special committee of one on membership to interest and secure as many additional applications from physicians who are eligible, as is possible, our Society will continue to offer more and more and the final result will be attained and our ambition realized.

At the present time the Society is offering:

1. Medical protection through Medical Organization.
2. Increased strength through increased membership. (1916 membership was nearly twenty per cent greater than the greatest membership before. 1917 membership far ahead of 1916 for the corresponding dates).
3. Proposed Medical Legislation, the repeal of physician's license tax. (A distinct saving).
4. Promotion of social and fraternal relations.
5. Promotion of respect of community.
6. Eligibility to membership in Southern Medical Association and American Medical Association.
7. Endorsement of State Society as recognition of good standing.

8. Endorsement of the State Society when sought before appointments by many organizations.

9. Bureau of information for locations vacated and applications for locations.

10. Medical Defense: a protection no physician can afford to be without and of itself worth more than the annual dues.

11. A Medical Journal: THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL, a monthly magazine which has a subscription price of $2.00 but which will be furnished the members of the State Society at no extra cost to them, the Society bearing the expense.

12. All the foregoing besides the Scientific Value of membership carried on through:

(a) Parish Medical Organization,
(b) District Medical Organizations, and
(c) The Louisiana State Medical Society.

From the foregoing it can be clearly seen how the eligible physician is depriving himself of what justly belongs to him and lies within his reach.

A Suggestion: Beginning with this issue of the JOURNAL each member should keep the file of his Journals not only for reference but because in years to come it will be of decided advantage and interest to have a complete set of the transactions of the Society. So keep all the issues together.

Application blanks will be gladly furnished upon request.

CURRENT LITERATURE

In a bulletin from the laboratory of Dr. Juan Iturby this writer and Dr. Eudoro Gonzalez, of Caracas, Venezuela, publish the results of their studies on the BACTERIOLOGY OF TYPHOID FEVER.

A new road was opened in the pathogeny and biological diagnosis of *typhus abdominalis* when Neufeld, Castellani and Shottmuller demonstrated that typhoid fever begins as a bacteremia, and that it is only during the second week that the infective agent becomes localized in its site of predilection—the intestinal lymphatic glands and, especially, the gall-bladder.

From this it follows that the only reliable diagnostic method during the first few days is hemoculture; in the second period of seven days, agglutination is the best test for establishing a sure diagnosis.

During the last three years, the writers above mentioned made a comparative study of the results obtained with agglutination and hemoculture in the different stages of the disease variously called the *slow fever of Caracas, typho-malarial fever, infectious fever,* and which a bacteriological examination shows to be nothing more or less than typhoid fever.

It is desirable et set forth here certain technical recommendations which are indispensable in the reactions mentioned. In regard to hemoculture, it is necessary to observe certain requisites that they used in investigating *B, typhosus* in water. Bile, which is the best medium for cultivating bacilli of the typhoid group, should be freshly collected and placed in Erlenmeyer flasks for twenty-four hours; it is then filtered, distributed in sterilized test-tubes in quantities of 5 c. c. each, and sterilized at 115 degrees C. for forty minutes. However, in spite of this precaution, the bile becomes altered in two or three weeks, the bile-salts and other products being deposited at the bottom; hence, it is best not to use bile that is more than ten days old.

After carefully sterilizing the bend of the elbow, a sterilized syringe is used to withdraw from 5 to 10 c. c. of blood from the medium-basilic vein, which is carefully deposited in a tube of bile, the culture is placed in an oven for twenty-four hours

at a temperature of 37 degrees C., and then inoculated in successive dilutions in Petri-dishes according to the Drigalski-Conradi method. As a general rule, in about fourteen or sixteen hours after making the plate-cultures, when bacilli of the typhoid exist, blue colonies are seen in the form of dewdrops, which are identified with anti-typhoid serum, or by Kuhnemann's ectoplasmatic staining. For sero-agglutination, the authors always used cultures of *B. typhosus* in 3% peptone solution in order to prevent the cloudiness (*grumos*), which usually appears in cultures in beef-broth. They regard as a positive reaction whenever agglutination takes place in proportions of 1:100 or 1:150.

In 110 cases examined, the following results were obtained in the first three weks of the disease. In the first week hemoculture gave 14 positive and no negative; second week, 3 positive and 10 negative; third week 1 positive and 10 negative. Agglutination: First week, 6 positive and 21 negative; second week, 32 positive and 2 negative; third week, 11 postive and no negative. Comparing the two methods, we have the following percentage of results: First week, hemoculture 100½, agglutination 25.9%; second week, remoculture 23%, agglutination 94.1½; third week, hemoculture 10 per cent, agglutination 100%.

In the relapses, which usually occur at the end of the fourth or fifth week, hemoculture shows, in the majority of cases, the presence of *B. typhosus.* —*McShane.*

Differential Diagnosis of Ulcerative Granuloma and Its Treatment With Tartar Emetic.—Dr. Alfredo A. da Matta, of Manaos, Brazil, gives an interesting review of ulcerative granuloma in the *Gaceta Medica*, of Caracas, Venezuela, No. 4, 1916. The disease seems to exist in all of the American countries. The apparent infrequency of granuloma arises from the inability of many clinicians to recognize the responsible pathogenic agent, the *Calymmato bacterium granulomatis* of Aragaon and Vianna.

The affection is slow and insidious; the microbe invades healthy tissues so slowly that the patient is ofttimes able to continue at his work for a long time. The favorite site of the disease is the inguinal region, the penis, and the scrotum. It may

more or less easily extend to the pubic region, the inner side of the thigh, the perineum, and even to the anus and coccyx; this extension depends upon the virulence of the microbes, the receptivity of the patient and the duration of the disease. Cases of ulcerative granuloma are much rarer in women than in men, especially when situated on the external genitals.

At first considered as of venereal origin, the treatment of ulcerative ganuloma was limited to mercury, salvasan, 914, the iodides, and certain other drugs, and always with a negative result, if not, at times, accompanied by an exacerbation.

Nowadays, the diagnosis is made quickly and with precision by finding the specific parasite. A smear is made on a glass slide with a minute fragment of tissue taken from *beneath* the superficial part of the ulceration, and preferably from an area recently invaded, where the microbes are most numerous; the smear is fixed with methylic alcohol, and finally stained with Giemsa. This procedure has given the best results in the clinics of Brazilian physicians, and we owe to Aragaon and Vianna, whose masterly studies were made in the Oswaldo Cruz Institute. The parasite of ulcerative granuloma is facultatively aërobic; it possesses great vitality and sets up fermentation. Rabbits and rats inoculated with pure cultures die in from 24 to 48 hours. This same parasite was suspected by Donovan; by Siebert in 1907; by Flu in 1911, and by Rabello in 1917. Aragaon and Vianna set all doubts at rest on the subject, and they named the organism *Calymmato bacterium granulomatis.*

The cutaneous affections that might be mistaken for granuloma are: Tuberculosis of the skin, lupus, syphilides and serpiginous chancroid. The microscope, as well as the clinical history, will enable us to differentiate.

As before remarked, all treatment remained practically negative until tartar emetic was used. The eminent Brazilian physician, Dr. Gaspar Vianna, conceived the ide of applying tartar emetic to the granuloma. This remedy had previously given him good results in the treatment of tegumentary leishmaniosis. The lesions of ulcerative granuloma, at one time regarded as incurable, yielded to the chemico-therapy of tartar emetic so

promptly that it has come to be looked upon as a veritable specific. This constitutes the so-called Brazilian method.

The use of tartar emetic was at one time widespread. Broden and Rhodain used it intravenously in African trypanosomiasis. Vianna also used the intravenous route. The drug is commonly used in a 1% solution. Dr. Matta has occasionally used as high as a 4% solution. The initial doses should not exceed two to four centigrams of tartar emetic at each injection, gradually increasing them to sixteen centigrams. Dr. Matta rarely gave beyond ten centigrams. The injections are given in series of from three to five, every day or every two or three days, according to the size of the lesions and the susceptibility or tolerance of the patient. At the end of each series the patient rests for from four to eight days; Dr. Matta deems that interval to be necessary in order to avoid the phenomena of a tardy saturation, which vary with each individual.

When improvement sets in, as shown by the modification of the granulomatous tissues, the doses should be gradually diminished until they reach the initial dose; in the following series the increasing doses should be given.

When the lesions disappear, being replaced by cicatricial tissue, Dr. Matta lays great stress on the therapeutic value of a final series of injections which brings about a radical cure. This extra medication is based on the fact that experience has shown that even if a very minute patch of active granulomatous tissue should remain in a zone of cicatricial tissue, the ulcerative process will resume its destructive course and end in a complete relapse.

The tartar emetic rapidly modifies the aspect of the lesions of granuloma. The pus and sero-pus first disappear; the surface of the lesions remains entirely clean; the granuloma becomes whitish; the neoplastic tissues lose their characteristic induration. From the very first injections, the intense pain is relieved and the torturing pruritus disappears. The lesions recede, diminish in size, the ulcerative process is checked, restoration of the tissues of certain zones takes place, and all of this in a relatively short time; and, finally, the granulomatous area

is occupied by a strip of white cicatricial tissue, of variable size and irregular outlines.

The technic for the preparation of the solution of tartar emetic consists of sterilization in the cold by means of a Chamberland or Berkerfeld filter. A flask is sterilized in an autoclave, the flask being provided with a Berkefeld or Chamberland tube, the end of which is fitted with a funnel; this flask has two outlets, one for the needle and another for an air bulb. The tubes are closed with pressure-forceps, a 1% solution of tartar emetic is placed in the funnel, dissolved in physiological serum or sterilized water, which filters through the Chamberland tube and falls into the flask.

The solution should be made fresh. It loses its strength in about four or five days, which is long enough to cover a series of injections. When freshly prepared, the solution of tartar emetic is more energetic and reliable; in about eight days insoluble crystals are deposited, and in fourteen to fifteen days persistent flocculi, also insoluble, are formed.

The reaction from the tartar emetic consists of a slight fever, headache, pseudo-rheumatic pains, some cough, with a sensation of itching or constriction of the throat. The cough and constriction are the most frequent phenomena. All these symptoms cease when tolerance is established; a few drops of adrenalin solution (1 to 1,000) in an ounce of water will also give relief. The contraindications to the treatment are: Organic heart disease, general malnutrition, degenerative lesions of the nervous system, broncho-pulmonary diseases and hepatico-renal affections. —*McShane.*

Cholecystostomy Versus Cholecystectomy (John B. Deaver, M. D., in *Surgery, Gynecology and Obstetrics,* March, 1917, Volume XXIV).—If there is any question in abdominal surgery more difficult to decide with finality and on the basis of incontrovertible evidence than this same problem of cholecystostomy versus cholecystectomy I am not aware of it.

If we could only eradicate the notion that gall-stones are the essential indications for surgery in cholecystic disease, it would be a great gain. If it were understood *that the infec-*

tion is the back, bottom and sides of this Pandora's box of upper abdominal troubles, there would be less difficulty in pointing out that gall-stones are but a single sequel and by no means the most important one of this condition. It is the metabolic disturbances, the lowered resistance, the organic degenerations consequent upon the infection that contribute by far the greater part of the surgical mortality.

Cholecystostomy will not cure all cases. We must remove the gall-bladder, which is the seat of hydrops, or empyema, or when the cystic duct is strictured or contains an impacted stone. The strawberry gall-bladder must be excised if more than temporary relief is to be secured. We have long known that the *prospect for permanent cure is not great if we leave behind a gall-bladder which is greatly thickened or distorted, and the only possible excuse for leaving a gangrenous or suppurating gall-bladder is in case the dangers of immediate removal contra-indicate this step.*

In 65% of the cases of recurrence after cholecystostomy the cause of recurrence was traceable directly to failure to remove the gall-bladder.

The remainder of the recurrences was due to stones, which had been overlooked, in the common or hepatic duct.

This brief analysis shows that from the standpoint of the end-results infective conditions of the biliary tract are best treated by removal of the gall-bladder. This is in line with the much-quoted recent work of Rosenow on the persistence of bacteria within the walls of the gall-bladder and with the fact long known that catarrhal infections of the gall-bladder are for practical purposes non-existent, all infections being interstitial infections.

My feeling in regard to these two operations, speaking generally, may be stated thus: Cholecystectomy is preferable in the hands of the master of biliary surgery, since the mortality is but little higher in selected cases and the percentage of cures of the infection of the tract is greater. Cholecystostomy is slightly safer, is in many cases an eminently successful operation, and the surgeon may always reflect that two operations

on a living patient are better than one on a dead one. He should remember, also, that prolonged drainage is the secret of sterilization of the biliary tract and by this means may convert unsuccessfully cholecystectomies into successful ones.

Cholecystectomy in the *presence of jaundice and in the absence of a markedly and microscopically diseased gall-bladder* is in my judgment out of place. Under these conditions cholecystostomy is the operation of choice.

Jaundice in the absence of inflammation and obstruction of the common duct is most probably due to cholangitis which calls for drainage. Drainage by way of the gall-bladder is much more simply made than is drainage by the common duct.

In the individual case I incline now to cholecystectomy when the gall-bladder is obviously diseased and presumably the primary and residual seat of biliary infection.

This covers the vast majority of cases. —*Isidore Cohn.*

THE INDICATIONS FOR CHOLECYSTECTOMY (Fred B. Lund, M. D., *Surgery, Gynecology and Obstetrics.* March, 1917. Volume XXIV).—We have gradually come now to regard cholecystitis, or infective inflammation of the gall-bladder, as more important than the presence of stones, as usually antecedent to stone formation, and fundamental. The cholecystitis is primary and the stone formation, though of great and often overshadowing importance, secondary. In regard to operative treatment, as time has gone on, we have learned something by our failures; among other things that gall-stones may recur after cholecystostomy, and that cancer of the gall-bladder may ensue upon this operation. In an experience of 347 operations upon the gall-bladder and bile ducts, I have had three cases in which stones have reformed after removal, and 3 cases of cancer of the gall-bladder, developing after the removal of stones. Mayo, Finney, etc.—symptomatic cure after cholecystostomies has been not more than 75%; therefore 75% had symptoms.

Fifteen or twenty years ago, some of the bolder spirits among us advocated the removal of the gall-bladder, almost as a routine; i. e., where the conditions of the patient or anatomical

conditions did not render it dangerous. However, the majority of surgeons were against this procedure, and upon that side, it is to be noted, the great influence of the Mayo clinic was thrown. The reason for the preservation of the gall-bladder was the supposed need for the bile drainage through the tube tied in it to relieve the infection of the ducts. The same clinic and others of influence and importance have in recent years so changed in practice as to perfom cholecystectomy in 90½ of their cases of gall-bladder disease.

In cholecystectomy, a conservative surgeon—and by conservative, I mean one who conserves the lives of his patients—will always carry a drain down to the ligature on the duct, and if drainage is necessary in the given case, the bile will find its way to the surface in two to six days and take care of itself. It is remarkable in how large a portion of cases this gush of bile does not take place.

In acute cholecystitis without stones we are dealing with a condition which may, but probably not, be cured by drainage. Here cholecystectomy is indicated. In chronic cholecystitis without stones we have a thickened, stiff-walled gall-bladder, usually adherent to the pylorus, omentum, colon, etc., and forming stronger adhesions as time goes on.

Acutely inflamed gall-bladders, especially gangrenous gall-bladders, should be removed if the operation is not too difficult and the patient's condition too poor. Gangrenous gall-bladders, if not taken out, have to slough out, and the patient is subjected to long-continued, low-grade infection while this is taking place.

Under what circumstances, then, should we remove the gall-bladder? I have for years maintained that the gall-bladder should be removed under the following conditions:

(1) In cases of very thick, acutely inflamed, bright-red, or gangrenous gall-bladders due to the impaction of a stone in the cystic duct.

(2) In cases of chronically thickened gall-bladders. Here (a) the thick walls cannot contract and drive out the bile, so that what bile gets back into the gall-bladder is sure to stagnate there; and (b) after cholecys-

tostomy, the walls do not contract, so that we get a mucous sinus for a long time, or for life.

(3) In cases of gall-bladders very much distended with clear fluid from impaction of a stone in the cystic duct. Here the duct has been closed and probably ulcerated and strictured by the irritation of the stone, so no bile gets back. In these cases, removal is usually technically simple.

(4) Wherever suspicion exists of malignant disease.

(5) In chronic cholecystitis without stones, but with moderate thickening and ulceration of the mucous membrane, giving little yellow spots on the mucous surfaces, the so-called "strawberry gall-bladder." These do not get well with drainage alone.

(6) In chronic cholecystitis without stones but with adhesions to the surrounding organs, especially the pylorus, which cripple the latter and cause symptoms. Here, also, drainage alone is only temporarily efficient. The gall-bladder is a constant focus for low grade infection and adhesions, which will continue to form and perhaps spread until its removal; all these processes being attended with discomfort and invalidism to the possessor of the organ.

To these should perhaps be added in view of the definite cases of recurrence after operation that have occurred in my practice, and also of cancer of the gall-bladder, and of the recent experience and quoted statistics of many of our best surgeons:

All cases of gall-stones in which the operation is not for any reason unusually difficult or dangerous; and

All cases of cholecystitis without stones where the same conditions exist.

There can be no question that modern technic, the use of adequate and properly-located incisions, the use of the gall-bladder as a tractor to bring the liver practically outside the abdomen and keep it there while the common duct and cystic duct are tied, and excising the bladder from below upward, etc., have done very much to render the operation simple and safe; and for that reason as well as those given above, the indications should be extended.

In what conditions should cholecystostomy be performed?

(1) In all cases of acutely inflamed gall-bladders, with or without stones, in which the patient's condition or the technical difficulties render the removal of the gall-bladder unsafe.

(2) In cases of pancreatitis with jaundice. Here cholecysto-enterostomy should be performed if possible; if not, cholecystostomy.

(3) In cases in which the common duct is strictured, or is likely to become so, and in which the gall-bladder has not been already removed, or is not too thickened and contracted to be of value for purposes of anastomosis.

—*Isidore Cohn.*

Aneurismal Obstruction of Vena Cava Superior With Special Reference to the Caval Syndrome.—Skillern (P. G. Jr.) reports in the *International Clinics* an example of this condition and also gives a brief review of the literature. The caval syndrome is described as consisting of enormous oedematous swelling of the head, neck, trunk, upper extremities, and marked obstruction of the veins. These clinical manifestations depend upon the formation of a collateral circulation, the extent of narrowing of the vena, and the size and extent of the pathologic process which causes the compression.

The first result of compression is obstruction of the venous blood in the entire territory of the vena cava superior. Through dilatation of all veins and capillaries in the territory of the upper half of the body an enormous cyanosis is often caused. The result of the obstructed outflow of venous blood while more blood is continually being brought to the part is the appearance of edema. From the distribution of the edema and its further advance one may draw diagnostic conclusions as to the site of compression. The lower half of the body is almost always free from edema, but the latter appears here as well, when through overdistention of the inferior vena cava obstruction in the tributaries of this vein results, or when through cardiac weakness edema appears in the lower extremities and scrotum. Usually, however, even in this case the swelling of the upper half of the body remains in characteristic contrast to the very much slighter

edema of the lower. Not only the subcutaneous cellular tissue, but also the deeper parts are involved by the edema, especially the mediastinum. Of importance also is edematous infiltration of the mucous membranes, for thus edema of the glottis may give ground for suddenly appearing death.

In the *diagnosis* of compression of the superior vena cava but little difficulty is encountered. The diagnosis is based upon the obstructive signs appearing in the terrtory of the vena cava superior, i. e., upon the direction of a collateral circulation and the prominence and characteristic course of the veins belonging to it. In favor of aneurism as the cause are the appearance of a dull, pulsating area and the Oliver-Cardarelli symptom.

NEWS AND COMMENT.

CREDIT DUE U. S. ARMY SURGEONS.—*The Journal of the Michigan State Medical Society* says: "The medical department of our Army has made the whole world a debtor. It was an army surgeon who slew the hookworm in Porto Rico; it was an army man who fought to the death with yellow fever in Havana and conquered it; it was an army man who made the disease-breeding swamps of Panama into a one of health; it was an army man who perfected camp sanitation and disease prevention during mobilization. And so one might continue to enumerate the world-wide influence that has followed the studies and discoveries of the men now enrolled in the medical department of our army. Noble, whole hearted, thinking not of or for themselves, but for their country and country's good. We may well be proud of our professional brothers thus serving our country. Small though the credit awarded them, great and enduring are these, their achievements."

NOTICE TO MEDICAL STUDENTS, PRE-MEDICAL STUDENTS AND TO THOSE WHO INTEND TO STUDY MEDICINE.—In answer to the unrest among students regarding their duty in the present national crisis, which has occasioned the most earnest consideration of the national authorities embracing the government services of the army and navy and the membership of the Council of National Defense, the following notice has been issued by the Council of National Defense:

"In the present national crisis a continuous supply of adequately trained medical officers is absolutely essential for the maintenance of armed forces in the field. It would be folly for the country to prepare for the immediate emergency alone—we must face the possibility of the war lasting for years. It is, therefore, the patriotic duty of all college students intending to study medicine to remain under instruction until the country can avail itself of their trained services.

"Medical schools are in a sense 'munition works' necessary to produce trained medical officers for the army and navy. All medical students must, therefore, in the interest of national safety continue their work until graduation. With the

exception of such men as the navy can utilize, all graduates are urged to secure a hospital training which the surgeons-general of the army and navy consider essential for their arms of the service."

INCREASED CHARGES IN A MEDICAL SCHOOL.—According to report, the George Washington University, Washington, D. C., will increase charges in its medical school from $150 to $175 a year, and in its dental school from $125 to $150 a year, to take effect next fall. The increased cost of supplies has brought this about.

TUBERCULOSIS MODERN WARFARE PERIL.—Dr. Herman Biggs, commissioner of health of New York, who was sent by the Rockefeller Institute, upon invitation of the French government to study the tuberculosis problem in France, states that tuberculosis is the greatest disease peril of European warfare. Living in the trenches and dugouts as do the European soldiers is not conducive to health as is living in the open air. Dr. Biggs asserts that there are 400,000 to 500,000 cases of tuberculosis in the military and civil population of France at this time and is informed that what is true of France is likewise the condition in Austria-Hungary and Russia.

TO USE OPIUM TAKEN BY LAW.—The National Academy of Sciences received the report at its meeting in Washington during the past month, that large quantities of opium seized by officers sent out by the government to enforce the anti-narcotic laws will be used in making valuable hospital drugs which have been made scarce by the war.

PROHIBITION AND DRUG NOSTRUMS.—It is rapidly being discovered that high-content alcoholic drug nostrums are having enormously increased sales in "dry" states, so that the conclusion is forced upon us that prohibition is a farce until there is a suppression of the nostrum swindle.

STATEWIDE TUBERCULOSIS CAMPAIGN.—The Louisia Anti-Tuberculosis League has launched a state-wide campaign against tuberculosis. The plan is to have a "drive" from May 26 through June 2. During this time every home is to be visited, literature is to be distributed therein, automobile tours in the industrial districts are to be made, when

talks on tuberculosis are to be given in the simplest language, and subscriptions are to be asked ranging from ten cents, upwards. Membership in the League is one of the principal objects of the campaign. It is the desire of the League to collect a fund large enough to build a sanitarium where those who are beyond cure may be cared for, and to maintain and improve conditions at Camp Hygeia, the home for those in the first stage of the disease.

JAMES BUCHANAN BRADY NEUROLOGICAL INSTITUTE.—The New York Hospital is the recipient of a gift of $4,000,000, by the will of the late James Buchanan Brady, to establish a department of neurology, and Johns Hopkins Hospital, Baltimore, is the recipient of a gift of $300,000 to be used in the erection of the James Buchanan Brady Neurological Institute.

THE ARMOUR YEAR BOOK is a very attractive one, containing much interesting information about a wonderful industry. It is a digest of the Armour industries and the methods by which they conduct their business. The facts as contained in the book are presented with the aim of creating a better understanding of Armour & Co.'s function in the gathering of livestock and produce and the preparation, sale and distribution of the finished products.

TO CONSIDER COMPULSORY HEALTH INSURANCE.—According to Prof. Irving Fisher, the United States is the only great industrial nation without compulsory health insurance. In view of this need, the National Conference of Charities and Corrections has provided an entire division on the subject of social insurance for its meetings at Pittsburgh, June 6-13. In order to accommodate medical men who attend the meeting of the American Medical Association in New York, the program has been arranged to occur the latter part of the conference period. The chairman of this series of discussions is Max Senior of Cincinnati.

DEATH FROM ANTHRAX.—William Grossman, a landscape gardener of Pleasantville, N. Y., after only three days' illness, died in Bellevue Hospital from anthrax. The source of infection is unknown. Only one out of four patients, suffer-

ing with the disease and treated at Bellevue Hospital during the last three years, has recovered.

CHILD WELFARE RESEARCH.—The Legislature of Iowa has voted $25,000 a year to establish and maintain a child welfare research station in Iowa City. The State university will carry on investigations relating to prenatal care, feeding, prevention of disease, social conditions affecting child life, the part home life has in educating the child and forming its character, and methods of applying psychology to the development of the child.

STATE DRUGGISTS MEET.—The thirty-fifth annual convention of the Louisiana State Pharmaceutical Association met in New Orleans, May 6-9, and after busy sessions, elected officers for the ensuing year, as follows: President, Eugene H. Daste, New Orleans; first vice-president, John R. Taylor, New Iberia; second vice-president, John T. Balter; secretary, George D. McDuff; treasurer, Dr. Geo. S. Brown; corresponding secretary, Miss Aurelia B. Kuhn. The new executiv board comprises: Joseph P. Walker, Joseph H. Berner, Sidney J. Peters, John E. Guess and John T. Benedict. New Iberia was chosen as the next meeting place.

THE CHIMIOTHERAPY REVIEW, which Dr. J. Laumonier manages, and the first number of which has just appeared, will be devoted to the science of chimotherapy and fill a want in French medical literature. It will be published in French at No. 3 rue de Sevigné, Paris.

HEALTH SURVEY IN LOUISIANA.—Dr. Frederick L. Hoffman, statistician of the Prudential Life Insurance Company of America, has recently completed an extended trip through Louisiana in the private car of the State Board of Health, with officers of the board and Dr. H. R. Carter, Senior Surgeon, U. S. P. H. Service, in a state-wide campaign for malaria eradication, improved accuracy and completeness in birth and death registration, and public health matters generally. The principal stops were made in New Orleans, New Iberia, Lake Charles, DeRidder, Shreveport, Monroe, Tallulah, Baton Rouge and Alexandria. Over twenty public meetings were held, including medical societies, high schools, churches, etc.

In view of the fact that the death rate among the negro population, from all causes, as well as from malaria, is execssive, a special effort was made to reach them. It is anticipated that as a result at least a number of parishes will qualify for admission to the United States Registration Area.

An address embodying the results of the trip and matters and data pertinent thereto will probably be given at the forthcoming meeting of the American Public Health Association in New Orleans.

PREVENTING INFECTIOUS DISEASES.—A bulletin has been issued by the United States Public Health Service, calling the attention of the public to the importance of preventing communicable and infectious diseases, and to a number of bulletins issued free by the government to aid in bringing about this desirable result. Among the free bulletins are the following: "Good Water for Farm Homes"; "Typhoid Fever —Its Causation and Prevention;" "Prevention of Malaria;" "The Prevention of Pellagra;" "Tuberculosis, Its Predisposing Causes;" "Hay Fever and Its Prevention;" "Infantile Paralysis;" "Malaria—Lessons on Its Cause and Prevention;" "Fighting Trim—The Importance of Right Living;" "What the Farmer Can Do to Prevent Malaria;" "The Care of the Baby."

AWARD OF MEDALS.—The National Institute of Social Science recently awarded a gold medal to Dr. George W. Crile of Cleveland, in recognition of his work in relieving shock in surgery and in the field of blood transfusion. Medals were also awarded by the institute to Surgeon General Wm. C. Gorgas, for his work in the Spanish war and in the Philippines and Panama; Mayor John P. Mitchell of New York, for services in behalf of dependent children, and Prof. M. I. Pupin of Columbia University, for electrical inventions.

CALIFORNIA WOULD HAVE NATIONAL LEPROSARIUM.—California is the only state in the Union which has expressed a willingness to welcome the future national leprosorium provided for by the passage of a federal law last January, according to W. M. Danner, secretary of the International Mission of Lepers.

ST. LOUIS COLLEGE OF PHARMACY GRADUATES.—The St. Louis College of Pharmacy held the commencement exercises of the Class of 1917 on May 16, in the Sheldon Memorial Auditorium. The valedictory address on behalf of the faculty was delivered by George E. Moore, Ph. D., director of the Missouri Botanical Garden.

TO TRAIN MEDICAL OFFICERS.—Lecture courses for senior students on military medicine and and surgery will be begun with the 1917 session in the medical schools of the United States. The movement will be under the supervision of Surgeon General William C. Gorgas,, U. S. A., and Surgeon General William C. Braisted, U. S. N. The object is to supply qualified medical officers to the army and navy.

PERSONALS.—Dr. Chas. T. McGregor and Dr. A. M. Kahn, of Denison, Tex., are stationed at the naval coast defense station in New Orleans.

Captain Thomas Collins Austin, M. C., U. S. A., who finished his course of lectures in military medicine and surgery to the senior students at Tulane University, has been summoned by the War Department to report to the base hospital in St. Louis.

REMOVALS.—Dr. M. L. Flynt, from Mount Olive, Miss., to Mart, Tex.

BOOK REVIEWS AND NOTICES

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

Physiological Chemistry—A Text-book and Manual for Students, by A. P. Mathews. Second Edition. Wm. Wood and Company, New York.

This work does more than meet all the requirements of a standard text-book as to subject matter, logical arrangement and clear exposition; it is an inspiration to its readers. The author has written the work in the hope that it "may raise as many questions in the minds of those who read it as it answers." This unique attitude has given the work a charm and value rarely attained in a text-book. Essential facts and present day conclusions are given their proper emphasis, but the reader is also made cognizant of the limitations to our present knowledge of biological, physical and chemical phenomena; he is stimulated with the desire to know more of the many unexplored fields in the realm of physiological chemistry.

Mathews belongs to the physico-chemical school of biochemists and in the utilization of the illuminating advances in the field of physical chemistry for the explanation of vital processes the author has rendered a distinct service to the student of physiological chemistry. The chapter on the Physical Chemistry of Protoplasm is a masterful and authoritative presentation of the importance of this new science to biology and medicine. The work has an added value in that the biological and physiological processes are made the basic ones; thus the chemical aspects of vital activity are emphasized instead of making the work one for the treatment of a special field of chemistry.

A bibliography at the end of each chapter gives a list of well selected references, chiefly from the recent literature. About one hundred and fifty pages of laboratory directions form the third part of the book and includes the most recent quantitative and micro-methods.

The second edition corrects some errors of the first edition,

amplifies the bibliography, and extends the discussion of colloids and their surface phenomena. *W. E. Garrey.*

A Manual of Pharmacology, by Harold Sollmann, M. D. W. B. Saunders Company, Philadelphia and London.

Dr. Sollmann has assembled and put into this work an enormous amount of information on the subject of the properties, actions, and uses of drugs. While this renders the work all the more valuable as a reference book, the very mass of material contained therein, in the reviewer's opinion, makes it a hard task for the student to obtain from it what he needs in the time at his disposal. In a careful reading of the work the reviewer finds little with which he disagrees, and few or no omissions of the important newer knowledge of pharmacology. Of course, in a branch where so much still remains to be learned, there must necessarily be many differences of opinion as to the interpretation and conclusions to be drawn from the facts as at present revealed. Especially valuable are the sections dealing with opium and its alkaloids, with cocain, and with the digitalis group. The article on alcohol and that on ether and chloroform and the allied hypnotics are also especially to be commended. The reviewer would have expected from a colleague of Crile a more extensive and satisfactory discussion of nitrous oxide. The book, taken as a whole, represents better than any other known to the reviewer, the present status of pharmacologic knowledge. It it to be hoped that a wide sale will bring the author a reward commensurate with the industry and ability displayed by him. *J. T. Halsey.*

Practical Medicine Series, Volume VIII, Series 1916. Materia Medica and Therapeutics and Preventive Medicine, The Year Book Publishers, Chicago, Ill.

The character of the volumes making up this series is so well known to the profession that when the statement is made that this present number is up to the standard of its predecessors almost enough has been said. Of particular value to the general practitioner are the sections dealing with drugs and with the biological products such as organ extracts, serums, and vaccins. In small compass one finds here concise but sufficiently full reviews of what is new in these chapters. The reviewer believes, however, that the editor would add to the value of these abstracts were he to make his own personal comment on the correctness or value of the statements and suggestions made by the authors. *J. T. H.*

International Clinics, Volume Three, Twenty-sixth Series. J. B. Lippincott Company, Philadelphia.

This volume contains a large number of interesting and useful articles, among which, as of particular interest may be mentioned one on the treatment of obesity, three articles dealing with the X-ray diagnosis of pulmonary conditions, a brief but satisfactory discussion of the Schick test, and one on methods and value of rectal examination. The volume closes with a sketch of Armand Trousseau, a master clinician. *J. T. H.*

A Laboratory Guide in Pharmacology, by Harold Sollmann, M. D. W. B. Saunders Company, Philadelphia and London.

This Guide, used by Dr. Sollmann in his own classes, contains a large number of well chosen and clearly described experiments for class work in the pharmacological laboratory. Any student, after having done even a small portion of the experiments contained in this work, will have had a first class experience in pharmacological methods. *J. T. H.*

Practical Therapeutics by Hobart Amory Hare, M. D. B. Sc., Seventh Edition, Lea and Febiger, Philadelphia and New York.

This new edition of a work, which has, the reviewer understands, had a wider sale than any other text book sold in America, is up to the standard of the preceding editions. It has been reviewed so often in this journal that renewed comment on it is superfluous. *J. T. H.*

Organic Materia Medica and Pharmacognosy, by Louis B. Sayre, B. S., Ph. M. P. Blakiston Son & Company, Philadelphia.

Professor Sayre has thoroughly revised and brought up to date his presentation of pharmacognosy and organic materia medica. The work is proving, and will continue to prove useful to students and teachers of this subject. *J. T. H.*

Care and Feeding of Infants and Children for Trained Nurses, by Walter Reeves Ramsey, M. D. J. B. Lippincott Company, Philadelphia.

The author, with the assistance of two nurses of large experience in the management of babies and children, has compiled a reasonably small work which contains a large amount of practical instruction and useful knowledge. It should be useful not only to trained nurses, but also to mothers anxious to do their full duty by their offspring. *J. T. H.*

Nervous and Mental Diseases, Vol. X of The Practical Medicine Series, 1916. Edited by Hugh T. Patrick, M. D. Peter Bassoe, M. D., with the collaboration of Lewis J. Pollock, M. D. The Year Book Publishers, Chicago.

This is the tenth volume of the Practical Medicine Series of 1916 and is a most valuable book for the busy general practitioner who wishes to keep up with the advances in neurological lines. It contains material drawn from world-wide sources, well arranged and up to date. The comments and views of the editors on the various subjects do not form the lesser part in the value of the book. *L. L. Cazenavette.*

Diseases of Children, by Edwin E. Graham, M. D. Lea & Febiger, Philadelphia and New York.

On the whole the author has fulfilled the promise of his preface to present a work modern and practical. No attempt has been made to discuss theories of disease at length. Pathological findings are stated concisely but usually adequately and the bulk of the space has been devoted to symptomatology, diagnosis and treatment. The result is a text and reference book highly useful to student and busy practitioner. Some omissions are notable. Such it seems to the present reviewer is the total absence of any consideration of diabetes in children. One may also venture to question the advisability of morphin and codein in the treatment of cyclic vomiting (p. 266). Likewise the statement that the acetonuria of this condition should call for a restriction of the carbohydrate dietary is contrary to that little that is known of the production of acetonia. *I. L. Lemann.*

The Examination of the Urine and Other Clinical Side-Room Methods, by Andrew Fergus Hewat, M. B., Ch. B., M. R. C. P. (Edin.). Fifth Edition. Paul Hoeber, New York.

This little book covers in a practical way the examination of urine, blood, feces, sputum, etc., and in a manner easily followed by the average student or practitioner. The handy size (12 mo.) "vest pocket edition" also commends it. The methods are modern and the present edition has been revised to date. *Dyer.*

Progressive Medicine. A Quarterly Digest, Etc. Edited by Hobart Amory Hare, M. D., and Leighton F. Appleman, M. D. Volume XIX, Nos. 3 and 4. Lea & Febiger, Philadelphia and New York.

The same standard of excellence characterizes these two numbers as usually is found in this comprehensive review of current medicine. In the present volumes, diseases of the

Thorax, of the Skin (including Syphilis), Obstetrics, Nervous System, Digestive Tract, Kidneys, Genito-Urinary apparatus and Surgery of the Extremities are covered. Nearly a hundred pages are devoted to modern therapeutic remedies. The authors are always among the best known of contemporaneous medical writers, so the reader should get a large amount of prompt compensation for reading these books.

Dyer.

Harvard Health Talks. Harvard University Press, Cambridge.

The Cambridge press has issued several small brochures, two of which, "An Adequate Diet" by Stiles, and "Adenoids and Tonsils" by Coolidge, are before us. Each is full of merit in satisfying the object of the series, which is to present the salient features of each topic in plain language but yet in exact statements which shall be educational. A number of years ago such monographs were issued from the pens of such men as Fothergill, Playfair, Liveing and their contemporaries and they proved most acceptable as digests of current ideas on the subjects they covered. These Harvard books, because they are small and because they are compendiary, must find a like place. *Dyer.*

A Practical Medical Dictionary, by Thomas Lathrop Stedman, A. M., M. D., Fourth Edition, Revised. Wm. Wood and Co., New York.

The present edition has been demanded just two years after its predecessor and this in itself bespeaks the popularity of this publication. The effort has been made to bring the terms up to date and to include all the discoveries within the time which has intervened since the third edition. Among the medical dictionaries this volume holds itself as standard for reference. *Dyer.*

Mentally Deficient Children. Their Treatment and Training, by G. E. Shuttleworth, B. A., M. D., and W. A. Potts, M. A., M. D., 4th Edition. P. Blakiston's Son and Co., Philadelphia.

A considerable reference to institutional investigation and care of the feeble minded of the United States may be found in this estimable book by two distinguished English alienists, but the bulk of the observations are derived from experience in Great Britain. Under all circumstances the authors have contributed a work of large value, and especially in this day when the whole of this country is engaged in the problem of providing for the feeble minded. The psychologic clinics

in most of the large cities, dealing more particularly with school children and especially with defectives or exceptional cases among them, promise a large fund of material for future effort at relief.

The complete detail given in the compendium in review will make it of valuable service to all workers in this particular field, for it covers a large variety of the many phases of the question. *Dyer.*

The Mentally Defective Child, by Meredith Young, M. D., D. P. H., D. S. Sc. Paul B. Hoeber, New York.

This little book has been speciallly written for school teachers and for those interested in the educational care of exceptional children. It is evidently intended as a guide to the early recognition of such and physical characteristics are emphasized. Types are instanced and means of testing the more obscure cases are detailed, the Binet-Simon tests for example. About a third of the book is given to references to legislative acts governing procedures in defective children. *Dyer.*

Physics and Chemistry for Nurses, by Amy Elizabeth Pope. G. P. Putman's Sons. The Knickerbocker Press, New York and London.

The material presented in this book is far above the intelligence of the better trained nurses and the text would appear rather difficult of digestion to most nurses. As a practical work it has less place than as one of reference for the better educated nurse, for whom it really has a place. The chapters on physics and foods are clear and thoroughly adaptable for nurses' consumption, but those on chemistry are much too advanced. These criticisms should in nowise discount the praise which has been deserved by the author's effort, for the book shows throughout the evidence of painstaking care in its preparation and the many illustrations show judicious selection. *Dyer.*

Constipation, Obstipation and Intestinal Stasis, by Samuel Goodwin Gant, M. D., LL. D. Second Edition, enlarged. W. B. Saunders Company, Philadelphia and London.

In the introduction to this work, Gant states: "The subject of constipation is a broad one, and covers a field which is of interest to both physician and surgeon, because of the frequency of the condition and its far-reaching effects. Costiveness may exist in the absence of any demonstrable cause, on an inherited or acquired basis, or as the result of some traceable cause, or as the result of some traceable pathologic

lesion." All of this we think true, and further that "it is responsible for an inestimable amount of discomfort and suffering." In the 51 chapters into which this book of 564 pages is divided, we find every phase of this protean condition either stressed, or given the just consideration which its importance merits. Here will be found chapters on etiology; mechanical causes; symptoms and consequences of constipation; diagnosis; educational, psychic, diatetic, treatment; hydrotherapy; massage; mechanical vibration, electricity and other physical therapeutic procedures; medical treatment; treatment of the complications and consequences of constipation; treatment of constipation in infants and children; surgical treatment of mechanical constipation; intestinal operations; congenital malformation of the bowel; strictures; malignant and benign tumors of the colon and sigmoid flexure; foreign bodies; fecal impaction; adhesions; angulations; diverticula and rectocele; abnormal mesentery, volvulus; hernia; invagination; Lane's kinks, and general enteroptosis. Almost every imaginable condition to be met with in the intestinal tract, or in any other organ contributing in any manner to constipation, obstipation or intestinal stasis, is touched upon, and where warranted, dealt with in extenso. We consider this volume a very excellent book, quite in advance of the first edition, and well worth close perusal. The publishers, too, have done their work well, good paper, fine illustrations, and substantial binding add greatly to a work of this character. Dr. Gant's book has our hearty approval.

J. A. Storck.

Manual of Chemistry. By W. Simons, Ph. D., M. D., and Daniel Base, Ph. D. Eleventh Edition. Lea and Febiger, Philadelphia and New York.

An excellent review fills the opening chapter of chemical physics, which is followed by the principles of general chemistry, the non-metals being taken up in a systematic manner, followed by a consideration of the metals. Some of the important toxic symptoms of the metals might well have been included, as well as the modified arsenic test of Clark and Woodman.

The carbon compounds occupy a considerable portion of the text and their chemistry is presented very clearly. The reviewer questions the use of this book for students of medicine, as the modern trend of medical education is that the medical student should matriculate with his general chemistry behind him. As a text book for students of pharmacy and dentistry it should prove excellent. *Chillingworth.*

Principles of Treatment of Broken Limbs. Flurrey. Rebman & Co., New York and London.

The book is interesting from a historical standpoint, representing as it does a chapter in medical progress. We can easily see that it is the handiwork of one of the older ment who has not accepted readily the importance of the more recently introduced methods, which seems so necessary to our generation. For example (page 9) "The guides for the correct adjustment of the fragments at the time of their immobilization are: the assurance of touch, palpation; the proper outline of the limb as disclosed by its uninjured fellow; and possibly the revelations of the fluoroscope or X-ray." The description of the method of applying plaster casts is certanly antiquated. The author's description of the dressing of compound fractures with plaster casts and antiseptic gauze as an occlusive dressing is very different from the open extension methods described by Hull, and others writing from experiences gathered in the present war. Exception may be taken to the suggestions that permanent dressings should not be applied to fractures of the femur until primary swelling has subsided, as well as to the idea that the surgeon should supervise the anesthetic.

The author introduces an interesting chapter on the preantiseptic and early antiseptic periods in surgery as witnessed by him in Bellevue Hospital, all of which has historical importance. After carefully examining the book it would seem that the principal fact which the author wishes to convey is the usefulness of the perforated tin splints which he has introduced to strengthen plaster casts. *Isidore Cohn.*

Blood Pressure—Its Clinical Applications, by George William Norris, M. D., 2nd edition, revised and enlarged. Lea & Febiger, Philadelphia, 1916.

Norris' book is readable and serviceable. The section on the physiology of blood pressure by Dr. J. Harold Austin is particularly well done and will serve as a guide to the sources of original research in this field. It is to be regretted that necessarily so much of our text books on medicine must be devoted to the practice of medicine that a discussion of the fundamental facts upon which that practice is based is crowded to the background. Such treatises as the present are therefore to be welcomed and to be recommended to the student and the practitioner in order that a better correlation may be established between our science and our art. The chapters devoted to the consideration of blood pressure in abnormal conditions are comprehensive, adequate and clearly and succinctly put.

I. I. Lemann.

PUBLICATIONS RECEIVED

P. BLAKISTON'S SON & CO. Philadelphia, 1917.

Clinical Bacteriology and Hæmatology, by W. D'Este Emery, M. D., B. Sc. Fifth edition.

A Compend of Human Physiology, by Albert P. Brubaker, A. M., M. D. Fourteenth edition.

Rest, Suggestion and Other Therapeutic Measures in Nervous and Mental Diseases, by Francis X. Dercum, A. M., M. D., Ph. D. Second edition.

W. M. LEONARD, Boston, 1917.

Case Histories in Obstetrics, by Robert L. DeNormandie, A. B., M. D., F. A. C. S. Second edition.

Pulmonary Tuberculosis, by Edward O. Otis, M. D.

The Starvation Treatment of Diabetes, by Lewis Webb Hill, M. D., and Rena S. Eckman, with an introduction by Richard C. Cabot, M. D. Third edition.

PAUL B. HOEBER. New York, 1917.

Cancer: Its Cause and Treatment, by L. Duncan Bulkley, A. M., M. D. Vol. II.

The Internal Secretions, by E. Gley, M. D. Translated from the French and edited by Maurice Fishberg, M. D.

REBMAN COMPANY. New York, 1917.

Diagnosis From Ocular Symptoms, by Matthias Lanckton Foster, M. D., F. A. C. S.

J. B. LIPPINCOTT COMPANY. Philadelphia and London, 1917.

Text-Book of Ophthalmology, by Hofrat Ernst Fuchs. Authorized translation from the twelfth German edition; completely revised, reset and enlarged, by Alexander Duane, M. D. Fifth edition.

W. B. SAUNDERS COMPPANY. Philadelphia and London, 1917.

Diseases of the Genito-Urinary Organs and the Kidney, by Robert Holmes Greene, A. M., M. D., and Harlow Brooks, M. D. Fourth edition, thoroughly revised.

Principles of Pharmacy, by Henry V. Arny, Ph. G., Ph. D., F. C. S. Second edition, revised.

Diseases of the Stomach, Intestines and Pancreas, by Robert Coleman Kemp, M. D. Third edition, revised.

State Board Questions and Answers, by R. Max Goepp, M. D. Fourth edition, thoroughly revised.

WASHINGTON GOVERNMENT PRINTING OFFICE. Washington, D. C., 1917.

Public Health Reports. Volume 32, Nos. 14 and 15.

Maternal Mortality, by Grace L. Meigs, M. D. (United States Department of Labor, Children's Bureau).

United States Naval Medical Bulletin. April, 1917. (Bureau of Medicine and Surgery, Navy Department).

Report of the Health Department of the Panama Canal. February, 1917.

MISCELLANEOUS:

China Medical Board. First annual report. (The Rockefeller Foundation, 61 Broadway, N. Y.).

International Law and Autocracy, by Geoffrey G. Butler, M. A. A public lecture delivered before the University of Pennsylvania.

Annual Report of the United Fruit Company Medical Department. (Press of Geo. H. Ellis Co., Boston, 1917).

The Armour Year Book for 1917. (Armour & Co., Chicago, 1917).

Quarterly Bulletin Louisiana State Board of Health. (Louisiana State Board of Health, New Orleans, 1917). Vol. VIII, No. 1.

The Institution Quarterly. Vol. VIII, No. 1. March 31, 1917. (Springfield, Illinois, 1917).

REPRINTS

Equine and Bovine Streptococci as Causal Agents of Human Infections, by Albert J. Chalmers, M. D., F. R. C. S., D. P. H., and Alexander Marshall.

Acnitis in an Egyptian Soldier, by Albert J. Chalmers, M. D., F. R. C. S., D. P. H., and A. F. C. Martyn, Captain R. A. M. C.

The Alcoholic Problem Considered in Its Institutional, Medical and Sociological Aspects, by Charles B. Towns.

Sex Gland Implantation, by G. Frank Lydston, M. D.

Sur Les Tétanos Post Seriques, par Auguste Lumière.

The Value of Blood and Urine Chemical Examination in The Diagnosis of Nephritis, Diabetes Mellitus, Rheumatism and Gout; Blood Chemical Methods in the Estimation of Renal Function; The Hecht-Weinberg-Gradwohl Test in the Diagnosis of Syphilis; A New Animal Operating Table, by R. B. H. Gradwohl, M. D.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for April, 1917.

Cause.	White	Colored	Total
Typhoid Fever	3	.....	3
Intermittent Fever (Malarial Cachexia)	.....	.....	....
Smallpox	.....	.....	....
Measles	.....	2	2
Scarlet Fever	.....	.....	....
Whooping Cough	.....	.....	....
Diphtheria and Croup	4	2	6
Influenza	4	7	11
Cholera Nostras	.....	.....	....
Pyemia and Septicemia	.....	.....	....
Tuberculosis	43	51	94
Cancer	25	5	30
Rheumatism and Gout	.....	2	2
Diabetes	2	1	3
Alcoholism	1	.....	1
Encephalitis and Meningitis	2	1	3
Locomotor Ataxia	2	.....	2
Congestion, Hemorrhage and Softening of Brain	26	6	32
Paralysis	1	1	2
Convulsions of Infancy	.....	.....	....
Other Diseases of Infancy	7	7	14
Tetanus	1	2	3
Other Nervous Diseases	2	3	5
Heart Diseases	57	34	91
Bronchitis	3	2	5
Pneumonia and Broncho-Pneumonia	20	28	48
Other Respiratory Diseases	6	1	7
Ulcer of Stomach	1	.....	1
Other Diseases of the Stomach	19	11	30
Diarrhea, Dysentery and Enteritis	6	3	9
Hernia, Intestinal Obstruction	1	1	2
Cirrhosis of Liver	1	.....	1
Other Diseases of the Liver	.....	.....	....
Simple Peritonitis	4	1	5
Appendicitis	29	17	46
Bright's Disease	11	8	19
Other Genito-Urinary Diseases	4	1	5
Puerperal Diseases	.....	.....	....
Senile Debility	1	.....	1
Suicide	25	18	43
Injuries	21	20	41
All Other Causes	333	236	569
Total			

Still-born Children—White, 14; colored, 25; total, 39.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per annum for Month—White, 14.47; colored, 27.28; total, 18.06. Non-residents excluded, 15.49.

METEOROLOGIC SUMMARY (U. S. Weather Bureau.)

Mean atmospheric pressure 29.99
Mean temperature ..... 68.
Total precipitation ..... 4.11 inches
Prevailing direction of wind, southeast.